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ABSTRACT

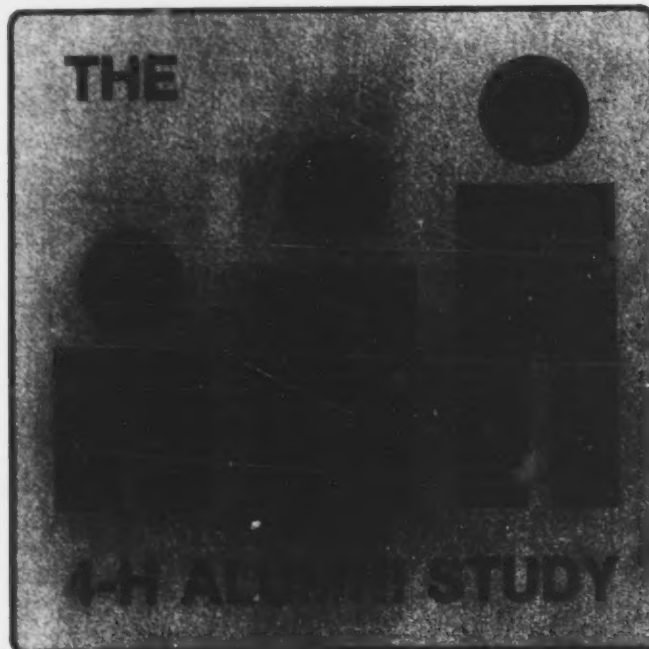
A 1985 national study compared 710 former 4-H members, 743 former members of other youth organization, and 309 nonparticipants in youth organizations to determine impact of 4-H on youth development. The study measured 4-H program effectiveness in developing knowledge/skills, self-expression, and skills for helping others. The study found 4-H alumni were not significantly different in personal characteristics from members of other youth organizations and over half were members of other organizations besides 4-H; alumni reported their most useful experiences came from contact with other people in the organization, developing skills, learning to work with others, and developing responsibility; alumni were least satisfied with leadership opportunities and reported lack of programs to meet their interests as reason for dropping out; as adults, alumni were more likely to be involved in community activities and 4-H leadership positions; females who participated for a longer period of time and joined at an early age were most satisfied with the program. The report concludes that 4-H had a positive image compared to other youth programs and offers suggestions to enhance program visibility, recognize needs of older youth, and provide leadership skills and opportunities. Tables and figures supplement the text; appendices include the survey questionnaire, a list of 4-H membership states by region, and five supplementary data tables. (IFL)

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RC016249

Assessing the Impact of 4-H on Former Members

Assessing the Impact of 4-H on Former Members

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EXECUTIVE SUMMARY

The 4-H youth program is one of the oldest and largest nontraditional educational efforts in public education in the United States. For nearly 80 years, 4-H has existed, in part, to help young people become mature, competent adults.

Over the years, efforts to assess the effectiveness of the 4-H program have been rather limited. In fact, most efforts have focused on the program's ability to reach increasing numbers of participants, with few addressing the impact of 4-H on its participants. In today's environment of complex problems, budget restraints, and expensive program alternatives, evidence is needed concerning "who benefited, by how much, and what difference does it make that individuals participated in 4-H?"

In response to the need for evidence of 4-H impact on youth development, Extension Service, USDA funded a national study of a cross-section of adult members of society. A randomly selected sample of individuals included 710 former 4-H members, 743 members of other youth organizations, and 309 nonparticipants in any youth organization who were interviewed over the telephone during the Fall, 1985. Because the total number of respondents among the four regions and between each sex varied more than was expected, the data were weighted to adjust for these differences and to correspond to national population distributions. As a consequence of these weighting efforts, the findings of this study are based on a weighted sample size of 16,177.

The study was guided by an attempt to answer five questions. Each is presented below with a summary of its findings.

- Do 4-H alumni differ on selected characteristics from those who did not participate in 4-H?

4-H alumni and past participants of other youth programs were more alike than nonparticipants in terms of their race, years of age, level of family income, and number of children participating currently in youth programs.

Nonparticipants had slightly more minority representation, were older, and had lower levels of education attainment, employment status, and family income. Differences between 4-H alumni and other respondents were apparent with regard to where they resided most of their early life and to their children's participation in youth programs. Alumni were reared primarily in rural areas and were more likely to have children in a 4-H program. Conversely, other respondents were reared primarily in urban areas and were more likely to have children in different youth programs. However, less than half of all respondents with children reported participation activity in youth programs for their children.

In sum, those who joined 4-H were not significantly different from those who joined other youth organizations. There was a difference, however, in the characteristics of those who joined organizations as youth when compared to those who did not join organizations as youth.

- In what types of youth development activities did respondents most often participate?

For 4-H alumni, activities, organized clubs, and competition were the most popular forms of participation in 4-H. 4-H alumni most valued the inputs and teachings of adult volunteer leaders, family members, and club meetings. Among those alumni who also participated in other organizations, a slight majority rated those experiences over 4-H in developing leadership skills and receiving responsibilities. Conversely, a slight majority rated their 4-H experiences higher in gaining knowledge and skills and developing a feeling of self-worth.

The average age which respondents joined youth organizations was 10.6 for 4-H alumni and 9.5 for other participants. 4-H alumni stayed for 4 years while other participants held membership for 6 years. It was found that those who stay in 4-H the longest were most likely to have joined at an early age, resided in a rural area, lived in the Southern/North Central region of the Nation and were male. For other participants, longer membership came from those who joined early, were females, resided in urban areas, and lived in the Northeast/Western regions of the country.

- Which youth organization activities were most valuable in the development of life skills?

The most useful experiences for both 4-H alumni and other participants came from contact with other people in the organization. In addition, opportunities to develop skills and make a contribution to the organization were most highly rated by both groups. Although more recent 4-H alumni placed higher value on leadership opportunities than did alumni from earlier times, 4-H alumni overall were less satisfied than other participants on opportunities for leadership. Finally, the largest contributions to personal development for both groups were learning to work with others and developing a sense of responsibility. Based on comparisons of ratings of experiences, 4-H alumni seemed more satisfied with their organizations' contributions to personal development than did participants of other organizations.

Results of a factor analysis of ratings of quality of experiences indicated that the more involved the individual in planning and decision-making, the more challenges and responsibilities the individual incurred. In addition, the strongest contribution to personal development was experiences contributing to self-esteem--self-confidence and responsibility. Finally, the benefits of knowledge and skills had a lasting impact on respondent attitudes toward the youth organizations to which they belonged.

- Are 4-H alumni more involved in community activities than those who did not participate in 4-H?

Participation of respondents as adults in community events and in the programs and services of the Extension Service was limited. Large majorities of each group were not members of community organizations nor users of the examined Extension programs. When respondents were members of community organizations, they were often highly involved by regular attendance and committee membership. Comparisons of 4-H alumni with non4-H respondents produced more often significant differences than not. 4-H alumni tended to be more involved in community activities and 4-H leadership positions than other groups, particularly nonparticipants of youth programs. Moreover, 4-H alumni and their families more often used the programs and services of the Extension Service.

- Does 4-H make a difference?

Among the factors impacting on life skills, the most dominant variable for 4-H and non4-H'ers was years of participation, followed by entry age, and sex of the respondent. Generally, those who were participants for a longer period of time, joined at an early age, and were female were more satisfied with the challenges and responsibilities incurred, personal development attained and directions taken by the organization in which they held membership. Moreover, 4-H'ers' satisfaction with their program's challenges and responsibilities had the most significant positive impact on achieved level of schooling and grades. Other program participants with urban backgrounds had more educational achievement while those with less satisfaction from their participation in youth programs made better grades.

The examination of factors impacting on adult community involvement indicated that the oldest and most educated 4-H'ers were the most active, especially in community activities and Extension contact. Adult activity of past participants in other programs was attributed to their years of participation, time since participation in youth programs, and residence in the South/North Central regions of the country. Nonparticipants from these regions and with higher levels of education tended to be highly active in the community and more frequent users of Extension programs and services.

Conclusions and Implications

4-H membership was rated by respondents as having a high, positive image when compared to other youth programs. Yet the 4-H program has had three limiting factors affecting its growth and impact. One has been its difficulty acquiring

new members since it was generally "perceived" as being unavailable in many areas. The second factor has been its inability to retain members into their late teens. Fifty-nine percent of the 4-H alumni reported dropping out of the program because it no longer met their interest. Third, opportunities for leadership may be too restricted. Of the 53 percent of the 4-H alumni who held membership in other youth programs, a significant number felt that their experiences in other youth programs were more helpful in developing leadership skills and receiving the most responsibility.

Nevertheless, much value was derived from participation in 4-H and other youth programs as well. Large percentages of respondents claimed that some of this value was attained from their contact with people; particularly valued were the contributions of adult volunteer leaders, family members, club meetings and the competitions. Participants in all youth programs seemed to rate highly the opportunities they had to develop skills, to make contributions to their programs/organizations, and to develop communication and cooperative skills. All wanted more leadership opportunities.

Compared to others, 4-H alumni were more satisfied with the program's contribution to their personal development (e.g., development of self-worth, responsibility development, and goal setting). Despite their positive experiences in youth programs, for most participants much of their experiences were not translated into corresponding levels of adult activity. Although large majorities were not joiners, 4-H alumni were involved more often than others. Further, they were more likely to involve their children in 4-H and other youth programs, as well, and to be involved themselves as a 4-H leader.

Based on the implications discussed, the following recommendations are provided:

1. Extension should publicize its 4-H programs so that nontraditional audiences can be better informed of opportunities from participation in 4-H.
2. Programs must be designed for older teens. Particular attention should be given to broadening opportunities for leadership.
3. Because individuals earning higher grades were less satisfied with youth organization contributions to their personal development, efforts should be made to insure that youth activities and programs adequately challenge all youth.

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INTRODUCTION

The turn of the century marked the transition of the United States from an agrarian-based society to an industrial-based one. At that time, social values were in a state of flux, there was a new urbanism, and American education was trying to develop a national meaning. Emphasis was being placed on applied education -- a combination of abstract instruction and learn by doing (Wessel and Wessel, 1982).

The 4-H youth program, one of the oldest and largest nontraditional educational efforts in public education in the United States, evolved from that cultural milieu. For nearly 80 years, 4-H has existed, in part, to help young people become mature, competent adults (Weatherford and Peck, 1984). It strives to accomplish this goal through the four "Hs" which stand for head, heart, hands, and health and represent the well-rounded development of young people.

The 4-H program has developed as an informal youth education movement around the philosophy of "learn by doing." Wessel and Wessel (1982) report that educational leaders, working to revitalize rural schools, were a major impetus behind this principle of applied education. Their early goal was to use agricultural sciences as a mechanism to tie formal education to the rural experiences of students. Educators found also that successful youth projects could be used to demonstrate the value of recommended farm practices to adult farmers.

Since that initial effort by public school officials to utilize the natural environment as a classroom, 4-H has grown in size, membership and complexity. The 4-H program is part of the Cooperative Extension Service of the United States Department of Agriculture (USDA). It is administered at the

federal level by the Extension Service, USDA and at the state level by the state land grant university. Both cooperate at the county level with local government officials to bring the 4-H program to youth 9 to 19 years of age. The 4-H program relies on the active involvement of parents, volunteer leaders, and other adults who organize and conduct educational subject/project experiences in community and family settings. These "learn-by-doing" experiences are supported by research and extension functions of the USDA Land Grant University System. Additional support is provided by contributions from the private sector at all levels, i.e., county, state, and national (Wessel and Wessel, 1982).

The 4-H program is one of more than 300 national youth associations that share a common mission -- transferring parts of the nation's cultural heritage (beliefs, attitudes, skills, knowledge, values, etc.) to young Americans under adult guidance (Erickson, 1986). For 4-H, that heritage is transferred through a curriculum embodied in the practical application of land grant university research in agriculture, home economics, and related areas. Because of its close ties to the land grant university, the public image of 4-H remains one of helping farm youth develop farm skills (SEA-Extension, 1980).

Over the years, efforts to assess the effectiveness of the 4-H program have been guided by the belief that only persons satisfied with the type of experiences offered in 4-H would become or remain voluntary participants of 4-H. Accordingly, most evaluation studies emphasized input-enrollment efficiency and the program's ability to reach increasing numbers of participants (Meyers, 1980). While this type of evaluation has provided answers to such questions as "how much and what are you doing with whom?", it has not addressed the impact of 4-H on its participants. In today's environment of complex problems, budget restraints, and expensive program alternatives, evidence is

needed concerning "who has benefited, by how much, and what difference does it make that individuals participated in 4-H?"

Recent efforts to collect and analyze specific evidence of the impact of 4-H on its participants, however, have not been well-received. Some believe that accountability requirements could undermine and destroy much of what was envisioned as the 4-H key to success -- decentralized programming. Others contend that evaluation and ongoing monitoring need not infringe upon the essence of the 4-H success story and could be a useful tool for improving and updating the program (Cirincone-Coles, 1980).

Although the debate has not been resolved, several points have emerged. First, there is not clear agreement on the contribution of different components of an effective 4-H program. Second, evidence of the contribution of 4-H program components is being called for by legislative mandate. Third, few systematic efforts have been undertaken to determine the impact of the 4-H experience on former 4-H members. Fourth, to determine reliable answers to the question "what difference did it make that people participated in 4-H?" requires a rigorous evaluation research design.

In response to the need for evidence of 4-H impact on youth development, Extension Service, USDA funded a national study of a cross-section of adult members of society. This manuscript reports the results of that study. The next section provides background information on the theoretical underpinnings of the 4-H program addressed by the study while the third section describes the methodology used in conducting the study. The fourth section presents findings of the data analysis and the final section of the report discusses conclusions and recommendations for future programming efforts.

BACKGROUND

Creation of 4-H clubs at the turn of the century reflected an underlying belief by this Nation's leaders in the need for scientific knowledge to be disseminated to would-be farmers and manufacturers. They carried out this belief in several ways. First, (as reported by Caldwell, 1976:12) passage of the Morrill Land Grant College Act of 1862 provided a grant of land to any state who would agree to use the land for

. . .the endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

Second, passage of the Hatch Act of 1887 created agricultural experiment stations. The act provided land grant faculty with resources necessary to establish a research base from which scientific agriculture could be taught. With an emphasis on practicality and a focus on applied research, agricultural experiment station scientists have developed many technological practices and equipment designed to enhance productivity and efficiency of American agriculture.

The third method created to disseminate scientific knowledge to farmers was provided by the Smith-Lever Act of 1914 which established the Cooperative Extension Service as the mechanism for "extending" research findings from the campus to the farmers in the field. According to Kelsey and Hearne (1949:1):

Extension work is an out-of-school system of education in which adults and young people learn by doing. It is a partnership between the government, the land grant colleges, and the people, which provides service and education designed to meet the needs of the people. Its fundamental objective is the development of the people.

Although the legislation creating Cooperative Extension did not specifically mention youth work, it was interpreted that a large share of the money would be for expansion of the youth work that was started by rural school superintendents, land grant college scientists, and United States Department of Agriculture officials (Wessel and Wessel, 1982). Later legislation and amendments to the Smith-Lever Act did, in fact, broaden Extension's mission and audience to include youth and urban residents.

The 4-H Program

From its inception, the 4-H program has relied largely upon organized clubs and competition to develop and reinforce knowledge and skills of 4-H members. Wessel and Wessel (1982) report that the value of organized clubs and competition to experiential learning can be traced to agricultural clubs and corn contests created at the turn of the century. Agricultural clubs started in 1901 by A. B. Graham, superintendent of schools for Springfield Township, Ohio, were successful in two ways. Graham found that young people who participated in clubs not only learned agricultural techniques but also developed a sense of pride in their rural heritage.

The application of agricultural techniques, in turn, were enhanced by corn contests. One of the more successful corn contests were started by W. B. Otwell, an Illinois Farm Institute President. He established prizes for those young people having the best yield of corn. The response of youth to participating in organized clubs that offered incentives for competing was overwhelming. Within a few years, organized clubs utilizing competition to enhance experiential learning had not only spread throughout the United States but also expanded to girls' clubs.

In the early years of 4-H, enrollment was boosted by government emphasis on the need for food and fiber to support World War I. Because of a total

community involvement in the war effort, 4-H club work expanded to urban areas and away from schools. This break from the school system required greater involvement from volunteer leaders in the teaching of subject-matter and reinforced the view of local determination of learning experiences (Wessel and Wessel, 1982).

A second change in 4-H program directions occurred in 1944 with the establishment of a National Advisory Group on 4-H. Wessel and Wessel (1982) report that the goal of the Advisory Group was to help 4-H adjust to a world dramatically changed by World War II. They developed 10 guideposts which reflected the Group's concerns with helping young people prepare either for leaving the farm or for staying in production agriculture. The goals of the guideposts were to help young people develop talents and attitudes for cooperation in work and play, choose a career, create better living environments, develop a sensitivity toward conserving natural resources, build a healthier America, share responsibilities for community development and "serve as citizens in maintaining world peace." In essence, the Advisory Group looked to 4-H as a means of contributing to development of young people wherever they lived for whatever they chose to make of their lives. The 10 guideposts were the principal inspiration for 4-H work after 1945.

The movement of 4-H to more urban areas also produced changes in the 4-H program. Influenced by the ten guideposts discussed above, 4-H has developed into a program where youth can learn rational decision making and thought processes and develop leadership responsibilities (Pigg and Meyers, 1980).

From the late 1960's to the present, Congress has appropriated funds for special programs including Expanded Food and Nutrition Education Program (EFNEP), Urban 4-H, and Community Development. These special programs serve primarily to expose youth to some specific subject information but do not

provide the extended hands-on experience or social reinforcement of the conventional 4-H club (Pigg and Meyers, 1980).

4-H Delivery Methods

Pigg and Meyers (1980) identify seven basic units of participation in the 4-H program including organized 4-H clubs, individual study, special interest groups, school enrichment programs, 4-H camps, instructional television, and programs conducted in cooperation with other youth organizations. A brief description of those units in which participation records are kept is provided along with participation rates in 1985 (ES, USDA Annual 4-H Youth Enrollment Records for 1985).

<u>Unit of Participation</u>	<u>1985 Enrollment</u>
Youth participating in organized 4-H clubs. An organized group of youth with officers and a planned program that is carried on throughout all or several months of the year.	1,649,409
Youth participating in 4-H special interest or short-term programs. Groups of youth organized and/or coordinated by Extension meeting for specific learning experiences. (Not a part of the school curriculum.)	1,059,911
Youth participating in 4-H school enrichment programs. Groups of youth receiving learning experiences not involving organized club activities coordinated by Extension in cooperation with school officials as a part of the school curriculum.	1,866,358
Youth participating in 4-H individual study. Youth participating in a planned 4-H program as individuals without group affiliation.	101,048
Youth participating in a 4-H Instructional TV Series. Youth participating in a learning experience via broadcast TV.	51,823

Experiential Education

Emphasis by developers of the 4-H concept on learner growth through experiences in public education was influenced largely by such early philosophers as William James and John Dewey, who articulated the American approach to education as a combination of abstract instruction and learning by doing (Wessel and Wessel, 1982). They, and others, believed that the goal of experiential education is not simply the use of experiences to better learn an idea or a skill. Experiential education goes beyond traditional goals of teaching a skill and creates an environment in which the learner is actively involved in his or her own learning.

This active involvement in one's own learning, in turn, contributes to the development of life skills which, according to Himsl (1973:13-25), means

problem solving behaviors appropriately and responsibly used in the management of personal affairs. As problem solving behaviors, life skills liberate in a way, since they include a relatively small class of behaviors usable in many life situations. Appropriate use requires an individual to adapt the behaviors to time and place. Responsible use requires maturity or accountability. And as behaviors used in the management of personal affairs the life skills apply to five areas of life responsibility identified as self, family, leisure, community and job.

Mullen (1981) further illustrates the development of life skills by placing them into three domains. First, participants of life skills programs respond to subject-matter content. Second, learning in a group setting enables participants to learn new problem solving behaviors and develop skills of self-expressions. Finally, new behaviors and skills enable participants to progress in the problem solving dimension. Development of life skills implies balanced self-determinism in which individuals are free to choose how to act because they not only know how to go about solving problems and how to conduct themselves effectively in relation to others, but they also have an understanding of their self worth and worth of others.

These three domains, conceptualized as competency, coping, and contributory, have been summarized by Weatherford and Peck (1983):

Competency life skills are those skills and bodies of knowledge which individuals must possess to perform at a "competent" level within any given subject area. Tied to these subject matter based competencies are those skills needed to both acquire and maintain a continuation of those competencies.

Coping life skills utilize competency skills within group applications. Relief of stressful situations through the development of situations in which effective group action can take place is a primary focus of this family of skills. Working together with others is the central skill, but related to it are those skills necessary to maintain competency and coping life skill areas necessary to be a productive and competent adult.

Contributory life skills constitute a family of skills which lead toward altruistic attitudes and behaviors. Utilization of competency and coping skills to benefit not just self and close others but for the benefit of the total good is the central thesis. "Generativity" is a stage that Erickson (1968) describes as a more mature developmental stage adolescents and adults move toward. This "giving back" is not only significant to the growth of an individual but to any organization (such as 4-H programs) which seeks to utilize others within spiral programming. These skills, while very much related to leadership competencies, include an array of prosocial behaviors which include good "followership" as well as leadership. Sharing, coaching, and mentorship skills are all the type of "higher order" life skills which follow competency and coping level life skills.

This study utilizes the life skills perspective as a guide in attempting to measure the impact of the 4-H program to help young people develop the basic competency (knowledge and skills), coping (self-expression in group settings) and contributory (increasing sharing skills with others) life skills needed to become self-directing, productive, and contributing members of society. A general model of youth experiential learning (presented in Figure 1) will be followed in this study. The model depicts adult community involvement (sharing skills) as being influenced by the life skills an individual develops as a youth. Life skills, in turn, are affected by the type and quality of organizational learning experiences an individual encounters. Such learning experiences are influenced by specific features of one's own background. In interpreting the model one should be aware that causal modeling cannot prove

causality. Rather, it is a technique for selecting those variables that are potential determinants of the effects and then attempts to isolate the separate contributions to the effects made by each causal variable (Asher, 1976).

Analytical Constraints

Any attempt to assess the impact of a dynamic program on former participants must be accompanied by several caveats. First, program emphases of youth development programs have changed dramatically over the years. Therefore, it is not possible to measure the contribution of specific components of any program. It is possible, however, to examine the perceptions of former participants concerning their involvement and satisfaction with youth organization experiences related to problem-solving behavior and the impact of those experiences on personal development.

Second, little information is available on the impact of 4-H on alumni. Therefore, this assessment is also an exploratory study. Consequently, the Youth Experiential Learning Model will be important in both accounting for impact of specific 4-H components and identifying other possible explanations related to the impact of 4-H programs on former participants.

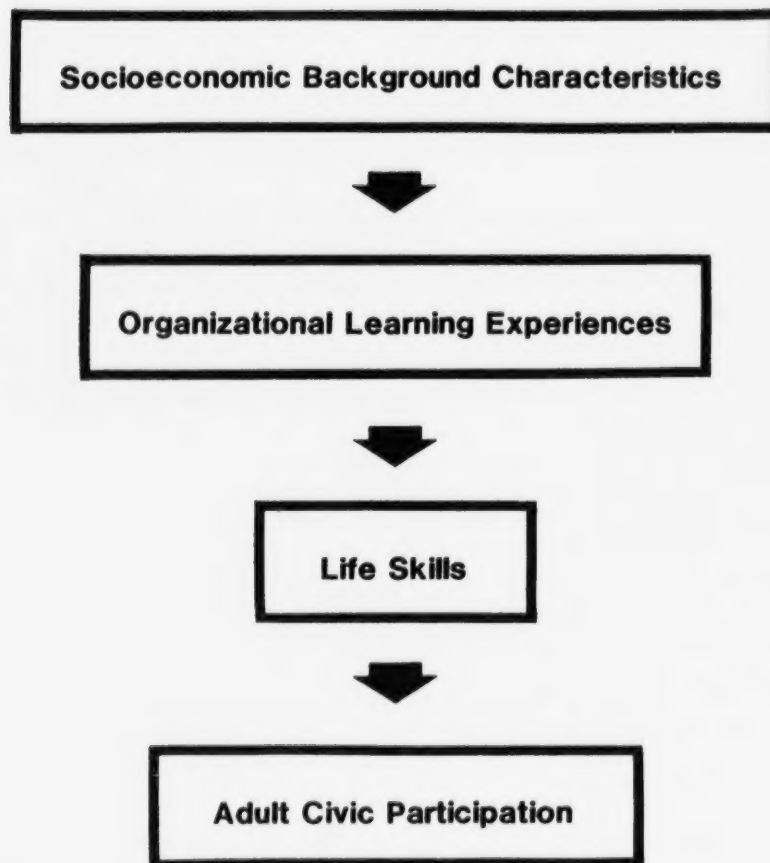


Figure 1: Youth Experiential Learning Model

METHODOLOGY

This nationwide study was conducted by the Texas Agricultural Extension Service in cooperation with the Department of Rural Sociology in the Texas Agricultural Experiment Station. In designing the study, representatives from these groups had to accomplish two important tasks: (1) select a sample which would be representative of former 4-H members and of the American public, and (2) conduct data collection in a standardized manner. These and other points including questionnaire development, data weighting, statistical analysis procedures, and reliability measurement are discussed below.

Sample Design

The four administrative regions--Northeast, South, North Central, and West (see Appendix A for constituent states)--of the Cooperative Extension Service were used to stratify the sample, thus providing not only nationally but also regionally representative data. A sample quota of 400 was planned for each region; half of the sample would be selected because it had participated in 4-H. Consequently, among the total sample of 1600 individuals, 800 (200 in each region) respondents with 4-H experience could be compared with 800 who had no 4-H experience.

In anticipation that all individuals in each sample would not participate in the study and that they would not be equally divided between 4-H and non4-H experiences, five additional samples, each having 400 names and telephone numbers, were randomly selected for each region. These additional samples could be used as needed to identify (screen) and select individuals with previous 4-H experience. Thus, each region of the U. S. had six randomly selected samples or replicates with a total of 2,400 individuals who could be

contacted to produce the desired sample quota of 400 completed interviews per region.

Questionnaire Development

The survey questionnaire was developed to obtain the following kinds of information:

- (1) Personal characteristics of participants and nonparticipants of 4-H as youth.
- (2) Types of youth development activities in which the target population participated as youth.
- (3) Reactions of the target population to the value of their youth development experiences.
- (4) Intensity of participation in adult community activities by the target population.
- (5) Measurement of the impact of background characteristics and youth learning experiences on life skills and participation in community events as an adult.

Prior to the conduct of the survey, the questionnaire was pretested among a random sample of 25 individuals to identify potential wording and continuity problems. Approval of the final version of the questionnaire was given by the National 4-H Impact Study Committee. This committee consisted of State Leaders of 4-H, selected 4-H Specialists, representatives from ES-USDA (Evaluation and 4-H Programs), and behavioral scientists with expertise in evaluation research. A copy of the survey questionnaire appears in Appendix B.

Data Collection

The procedure for data collection was guided by the assumption that interviews with non4-H respondents would be completed first and that screening of sample members for 4-H participation would be necessary. In collaboration with statisticians at North Carolina State University, the following procedure was developed to standardize data collection among the four regions.

- Interviewing was conducted Monday through Thursday, from 5:30 to 8:30 p.m. (Central Standard Time). These hours were adjusted to other regional time zones. Data collection commenced on October 2 and was completed November 11, 1985. This schedule of hours-of-the-day and days-of-the-week for interviewing was used because past studies have shown them to be the best periods for contacting individuals in their homes.
- Three telephone attempts were executed for each sample member until contacted. After 3 attempts and no contacts a sample member was excluded from the replicate sample.
- Working with one replicate at a time, interviewers attempted to complete first contact efforts, before proceeding to second contact efforts, and complete second contact efforts before proceeding to third contact efforts.
- After each contact effort, an interviewer recorded one of the following results: (1) completed interviews; (2) refusals; (3) callback; (4) no answer; (5) busy signal; (6) disconnected number; or (7) nonresidential number.
- After each completed interview, an interviewer recorded whether it was a first, second, or third contact effort. Scheduled call backs were treated as initial calls. This information was recorded as part of the research instrument and computer processed. Names were not randomly selected for second, or for third effort contacts; they were randomly assigned to interviewers. Interviewers varied the day on which second and third contact efforts were made.

- If an adult head of household answered the telephone, that person was interviewed. No effort was made to interview others in the household.
- When a busy signal was received, the interviewer returned the phone call every 5 minutes for 15 minutes. This represented one effort. If no contact was made, the second effort was made the next day.

After contact attempts were completed for a region's first replicate of names, the number of non4-H respondents was more than that of 4-H respondents; however, the quota for neither was obtained. A second replicate was then used. As interviewing proceeded, the quota for the non4-H respondents was completed during the second replicate. The following procedures were used when quotas were completed before all the names in a replicate had been contacted.

- Interviewers continued using the remainder of names in the replicate until they had made 3 attempts to contact and interview each name. This resulted in more interviews of non4-H'ers than needed in each region, yet the number of 4-H respondents was less than desired. This necessitated using additional replicates of names to screen and interview only individuals who had participated in 4-H as a youth.
- Screening and interviewing individuals were continued until a replicate of 4-H alumni was completed; if the 4-H quota had not been completed, then another replicate was begun. The screening process eliminated individuals with no previous 4-H experience. In each of the four regions, all 6 replicates were used to screen for 4-H alumni. Following this procedure, less than 200 4-H alumni were interviewed for Northeast and West regions. In the South and North Central regions, more interviews than the quota were completed. The actual number of respondents are reported for each 4-H administrative region in Table 1.

Table 1. Participation in National 4-H Alumni Study.

Region of the United States	Membership Status						Total
	4-H Alumni			Non 4-H Members			
	Male	Female	Total	Male	Female	Total	
South	61	169	230	78	156	234	464
North Central	70	137	207	129	159	288	495
Northeast	32	75	107	120	148	268	375
West	47	118	165	127	135	262	427
Total	210	499	709	454	598	1052	1761

Data Weighting

As shown in Table 1, the total number of respondents among the four regions and between each sex varied more than was expected. Consequently, the data were weighted to adjust for these differences. The weighting procedure, however, was confounded initially by the lack of current demographic data on the states from which the sample was selected and by the lack of information on the 4-H alumni population. Since the survey was conducted during 1985, effort was made to obtain and use population estimates for the period during which the survey was conducted and to estimate the 1985 4-H alumni population. Using population counts from the 1980 census, percents of males and females 9 to 18 years of age and 19 years of age and older were determined for each 4-H region. With the assumption that sex-age ratios have remained constant from 1980 to 1984, the calculated percentages were applied to 1984 population estimates of each region. These estimates were obtained from Sales and Marketing Management, a New York-based firm that publishes the annual Survey of Buying

Power (1985). The ratios of adult population (19 and older age) to adolescent population (9 to 18 years of age) were calculated for the regional-sex groups. Each ratio was multiplied by its corresponding number of 4-H members in 1985 to obtain a rough estimate of the adult 4-H alumni population. Finally, data weights for the 4-H sample were determined by dividing each estimated 4-H alumni population for a particular sex in a region by its corresponding sample of survey respondents.

To reduce the moderate variations among regions, these weights were dampened. Square roots of the regional alumni averages were taken and multiplied by the total 4-H alumni mean. The 1.75 to 1 sex differences in the weights was reintroduced to improve the ratio of male to female respondents who were former participants in 4-H. This was achieved in a way that preserved each adjusted regional alumni mean.

For the non4-H sample, weights were calculated by first subtracting estimates of the adult 4-H alumni population for a regional sex group from its corresponding population of individuals 19 years of age and older. The result was divided next by the appropriate sample of non4-H respondents to produce the weight. Since these weights seemed fairly stable, no dampening adjustment was applied.

The adjusted sample sizes for each sex within the former 4-H and non4-H samples were then reduced by systematically selecting every tenth case. By reducing the weighted sample size, computer analysis could be more efficiently conducted. Results of the weighting and reduction procedure are shown in Table 2. Table 3 shows the reduced weighted numbers of respondents by region and group. Population estimates are presented in Appendix C.

Table 2. Weighting Factors and Adjusted Sample of Respondents by Region and Sex.

Weight and Adjusted Sample	South	North Central	Northeast	West
<u>4-H Weighting Factors</u>				
Unadjusted: Males	45	29	58	16
Females	21	20	34	10
Mean	33	24	46	13
Adjusted: Males	44	38	52	27
Females	18	16	21	11
Mean	31	27	37	19
<u>Non 4-H Weighting Factors</u>				
Unadjusted: Males	276	136	142	117
Females	150	113	128	113
Mean	212	124	135	115

Statistical Analyses

To fully evaluate the effects of prior participation in 4-H and other youth organizations on adult experiences, respondents were sorted into three groups--former participants in 4-H (4-H alumni), participants in other youth organizations excluding 4-H (other participants), and nonparticipants. Analyses of the weighted data was conducted in several ways. Descriptive statistics (means and standard deviations) were calculated to identify general patterns among the data. Next, tests of significant difference were conducted using three techniques. The Chi-square test was applied to categorical data when particular groups were compared on selected background characteristics and program experiences. Student's t-test was calculated to determine differences between means of noncategorical data such as attitudinal ratings of

Table 3. Reduced Weighted Sample Reported by Region, Group and Sex of Respondent.

Analytical Groups by Sex ^{a,b}	South	North Central	Northeast	West	Total ^c
<u>4-H Alumni</u>					
Males	268	266	166	127	827
Females	304	219	158	130	811
Total	572	485	324	257	1638
<u>Other Participants</u>					
Males	1325	1333	1335	1006	4999
Females	1680	1254	1241	1119	5294
Total	3005	2587	2576	2125	10293
<u>Nonparticipants</u>					
Males	828	422	369	480	2099
Females	660	542	653	407	2262
Total	1488	964	1022	887	4361

^a Chi Square=196.1 df=6 p < .0001 for males: Group x Region.

^b Chi Square=58.6 df=6 p < .0001 for females: Group x Region.

^c Chi Square=95.1 df=6 p < .0001 for Group x Region.

program experiences. Analyses of variance were conducted on interval-type data and in situations where such data were cross-compared, for example, examinations of experiences of 4-H and other participants from different eras of time. For the third method of analysis, factor analysis was used to identify covarying patterns of responses of respondents for selected variables. Fourth, scales were constructed to summarize experiences of adult participation in various community organizations. The reliability of each scale was subsequently tested. Finally, correlation and path analyses were computed to test

for associational and causal relationships among the components of the Youth Experiential Learning Model shown in Figure 1. Factor analytic and path analytic procedures are discussed below in more detail. Where appropriate, comparisons among the three groups are made and discussed.

Factor Analysis

In general, factor analysis involves the examination of potential or hypothesized relationships among several variables. Depending on the level of theoretical knowledge of researchers using it, factor analysis can be used to explore for potential factors that would account for observed patterns of covariation. For this study, the observed patterns relate to the quality of the experiences that former participants had in both 4-H and other youth organizations. Three series of questions were asked to determine how respondents evaluated the challenges and responsibilities (problem solving) experienced in their participation, how they perceived participation contributing to their personal development, and what their overall attitude was toward activities and directions of the organizations to which the respondents belonged as youth. Each series was submitted to factor analysis and is described below in more detail.

Challenge. Former participants of youth programs were asked how often they experienced each of six challenges or responsibilities. For each challenge, they indicated whether they never, seldom, occasionally, often, or very often encountered it. These challenges were presented as: (1) How often were you given challenging tasks? (2) How often were you included in making important decisions? (3) How often were you involved in planning club activities? (4) How often did you have freedom to develop and use your own skills? (5) How

often did you feel you made a contribution? (6) How often were you given an opportunity to lead others?

Development. Personal development from program participation can occur in many ways. Former participants were presented twelve ways and asked to rate each on a scale of 1 to 5 with one being of no contribution and five being of great contribution. The development areas were: (1) Developing personal pride in achievements and progress, (2) Developing self-confidence, (3) Learning to work with others, (4) Developing leadership skills, (5) Developing the ability to communicate effectively, (6) Acquiring skills necessary for employment, (7) Learning the importance of good nutrition, (8) Learning to select and construct articles for clothing and/or home use, (9) Gaining understanding of how factors of production, processing, marketing and distribution of agricultural products affect the well-being of our nation, (10) Developing a sense of responsibility, (11) Setting personal goals, and (12) Involvement in community activities.

Attitude. The final series of questions addressed former participants' opinions about aspects of their youth programs. Alumni of 4-H were presented a list of nine statements about activities and direction of the 4-H program. For each statement, they were to indicate if they strongly disagreed, slightly disagreed, slightly agreed, or strongly agreed with it. The statements were: (1)* The 4-H program placed too much emphasis on competition and awards, (2)* 4-H had little to offer Junior High and High School youth, (3) There was no need for a 4-H camping program, (4)* 4-H kept young people busy and out of trouble more than most other youth programs, (5)* Parents and leaders benefited in learning from 4-H projects, (6) 4-H opportunities beyond the club and county were a positive factor for participating in 4-H, such as activities, events awards, and trips, (7)* The awards program in 4-H was a positive incentive that

kept members in 4-H, (8)* Knowledge and skills gained through 4-H have benefited 4-H members in their adult life, (9) Agriculture and home economics should continue to be the base of 4-H projects. Participants in other youth programs were presented a similar list (indicated by the asterisks) with six statements whose wording had been modified to apply to non4-H programs. Because the first three statements were worded negatively, their scale values were reversed for the factor analysis.

Factor Scores. The principal-axis factor method was applied to each set of variables to determine if the variables in that set are so highly interrelated that they form a single factor. If indeed they are, such a factor (e.g. called CHALLENGE) would be a collective representation of all the variables that are correlated with the factor and could be used as a unique variable reflecting the quality of that experience. For this to occur, several conditions have to be satisfied. First, the factor would require an eigenvalue of 1.0; this is an indicator of the variation in respondent ratings of quality of experiences accounted for by the factor. Second, none of its variables could correlate highly with factors that also might be produced; these secondary factors would have a different conceptual meaning, thereby resulting in interpretive confusion if a variable were shared or highly correlated with more than one factor. Finally, for a factor to be used in subsequent analyses, a single factor value would have to be calculated for each set of variables for each respondent. In other words, values would be calculated for CHALLENGE, DEVELOPMENT, and ATTITUDE for each former participant.

To accomplish this factor analytic task, the factor analysis procedure employed by the Statistical Analysis System (SAS) calculated standardized scores for each variable associated with the factor. These scores proportionately weighted each variable according to the magnitude of its association to the overall factor. A variable's standardized score was then multiplied by a

former participant's response to the question for that variable. After this was computed for each variable, their products were added to produce a single factor value for a former participant for each of the three factor concepts. The higher the score the more important or positively perceived were the experiences and activities of 4-H and other youth programs.

Summated Scales and Reliability Measurement

Adult community participation was used as an indicator of sharing skills. Scales were constructed to measure the number of organizations and programs to which individuals belonged (scope) and their levels of participation (intensity).

First, all respondents to the survey were queried about their participation in community groups during the past two years. Seven groups were identified: (1) civic and luncheon clubs, (2) chamber of commerce, (3) a committee concerned with community affairs, (4) an agriculturally related group, (5) a political organization, (6) an industrial foundation, and (7) a church group. For each group, respondents were given, respectively, a score of one if they were a member, a score of two if they attended at least 25 percent of the meetings, and a score of four if they were an officer. These values were then summed to produce a range of odd-numbered scores from 0 (no participation) to 7 (a member who attended at least a quarter of the meetings and served as an officer). An overall community score was then calculated by adding the individual community-group scores. This produced a scale with values ranging from 0 to 42.

A final scale was calculated to measure the degree of involvement with programs and services of the county office of the Cooperative Extension Service. Six areas of interaction were presented to which respondents indicated

their frequency of involvement--never, once or twice a year, three to five times a year, every month, or at least once a month. These six areas were:

1. Attend educational programs sponsored by the Extension Service.
2. Consult Extension Agricultural Agents for help with agricultural/gardening/landscaping problems.
3. Consult Extension Home Economist for help with consumer/home related matters.
4. Listen to Extension radio programs.
5. Read news articles written by Extension personnel.
6. Receive Extension newsletters.

After each scale was constructed, its reliability was tested by Cronbach's alpha (1951). This reliability procedure measured the internal consistency of scale items (Carmines and Zeller, 1979; SPSS, Inc., 1983). Its general formula is expressed as:

$$\alpha = n/(n-1) [1 - \sum \sigma^2(Y_i) / \sigma^2_x]$$

Where n is equal to the number of scale items; $\sum \sigma^2(Y_i)$ is equal to the sum of item variances; and σ^2_x is equal to the variance of the the total scale. These reliability coefficients are equivalent to those calculated with the formula by Kuder and Richardson (1937, formula number 20) which uses dichotomous response categories.

Path Analysis

Following the conceptual framework presented in Figure 1, path analysis was used to determine the effects of selected background and program participation factors on adult community involvement. Figure 2 shows the variables used to measure the model as applied to former participants in 4-H and other youth programs; Figure 3 presents the model for nonparticipants.

The first path in Figure 2 addressed factors believed to impact on the length of one's membership in a youth organization. Because 4-H has an image of helping youth develop farm skills, this study examined the effects of gender, place of residence as a youth and entry age on years of participation. Region in which the individual respondent now lives also is included in the first path to control for possible geographical variations in response patterns and to detect 4-H administrative regional differences. Region was ordered according to ratio of 1985 membership in 4-H to 1984 estimated population for a region (South = 1, North Central = 2, Northeast = 3 and West = 4).

The second path identified the effects of socioeconomic background characteristics and length of organizational learning experiences on the development of life skills. It was assumed that length of participation in a youth organization would have a positive impact on the development of life skills. For this study life skills were divided into two categories for separate analysis. Those skills related to problem solving, personal development and attitudes toward activities and directions of the organization are analyzed in the second path. Those life skills related to competencies are addressed in the third path.

The third path focuses on the impact of life skills on formal educational accomplishments. These accomplishments were separated from other life skills for two reasons. First, it was not possible to measure respondents' competency skills related to practical experiences. Therefore, formal educational accomplishments serve as a proxy for competencies. Second, community leaders often have more formal education than those who are not as active in the community. By separating educational accomplishments from other life skills, the intervening effects of life skills on leadership through educational accomplishments can be examined.

The final path to be examined addresses the impact of educational accomplishments and years since youth participation on community involvement. For this study community involvement is measured in two ways: participation in seven types of community activities/organizations and programs conducted by the Extension Service. Years since participation in youth organizations is included in the analysis to control for possible variations in age of respondents and its indirect influence on community involvement.

Figure 3 reflects a limited model of adult participation in community affairs for nonparticipants in past youth programs. Adult involvement in community affairs and Extension activities are hypothesized to be affected by two groups of background characteristics -- socioeconomic and educational.

By means of the standard path theorem, the original zero-order correlations between any two variables can be decomposed into direct and indirect effects and represented by path coefficients. Each path coefficient reflects the magnitude of the direct effect of that particular variable on the dependent variable with the other variables in the path considered simultaneously in the multiple regression equation. The magnitude of the coefficient is an estimate of the net degree of change in the dependent variable that would result from a one standard deviation change in the independent variable. The greater the coefficient, the greater the change in the dependent variable, hence; the more powerful the independent variable. Indirect effects are the effects on a dependent variable produced by an independent variable while mediated by some intervening variable(s). The total strength of the relationship or total explained variation among independent and dependent variables is indicated by the magnitude of the R^2 statistic.

In this study, two types of path coefficients were calculated. Standardized path coefficients were used for comparisons between different variables within a causal model applied to a mutual group of respondents, for example,

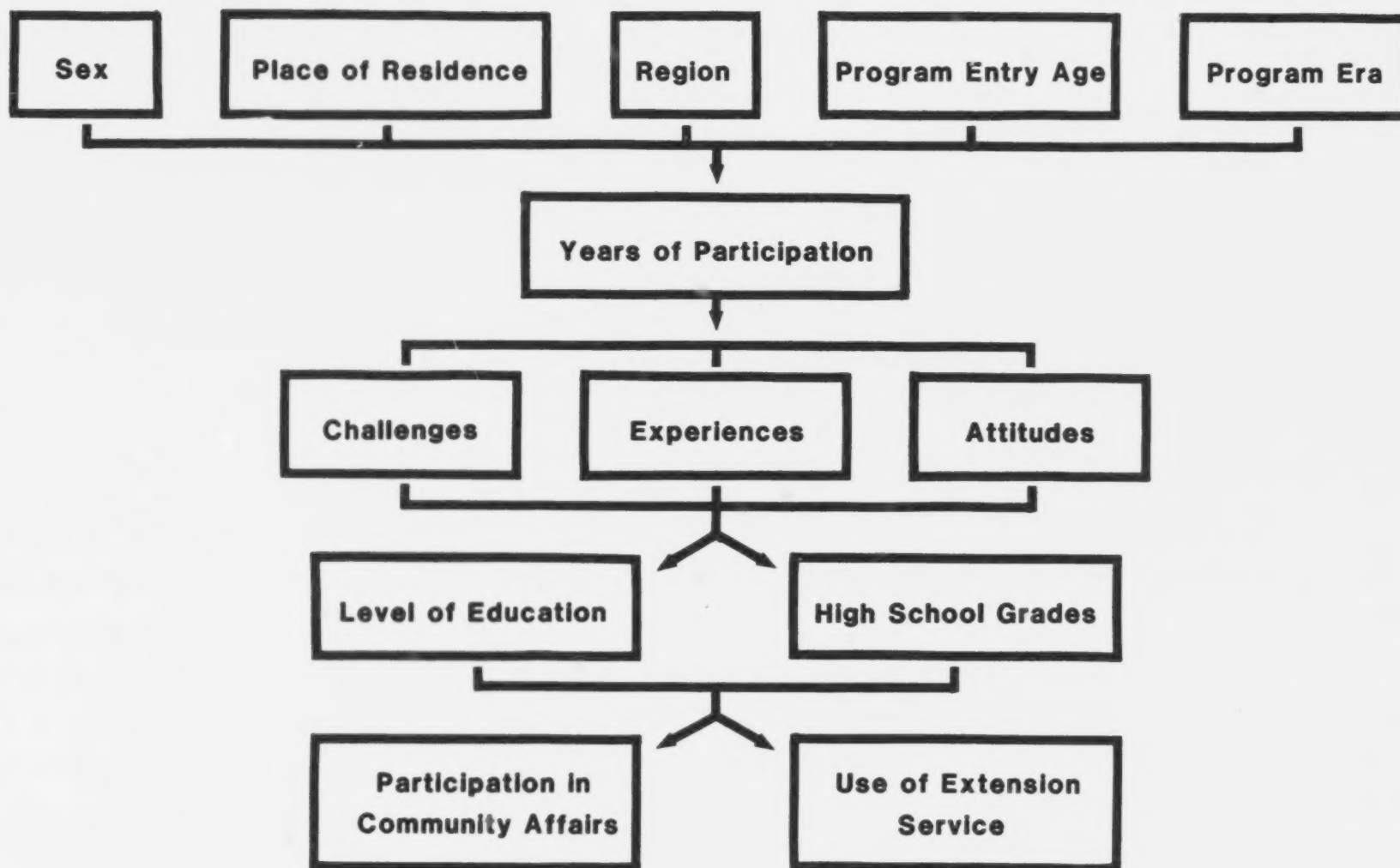


Figure 2: Path Model of Youth-Adult Organizational Participation

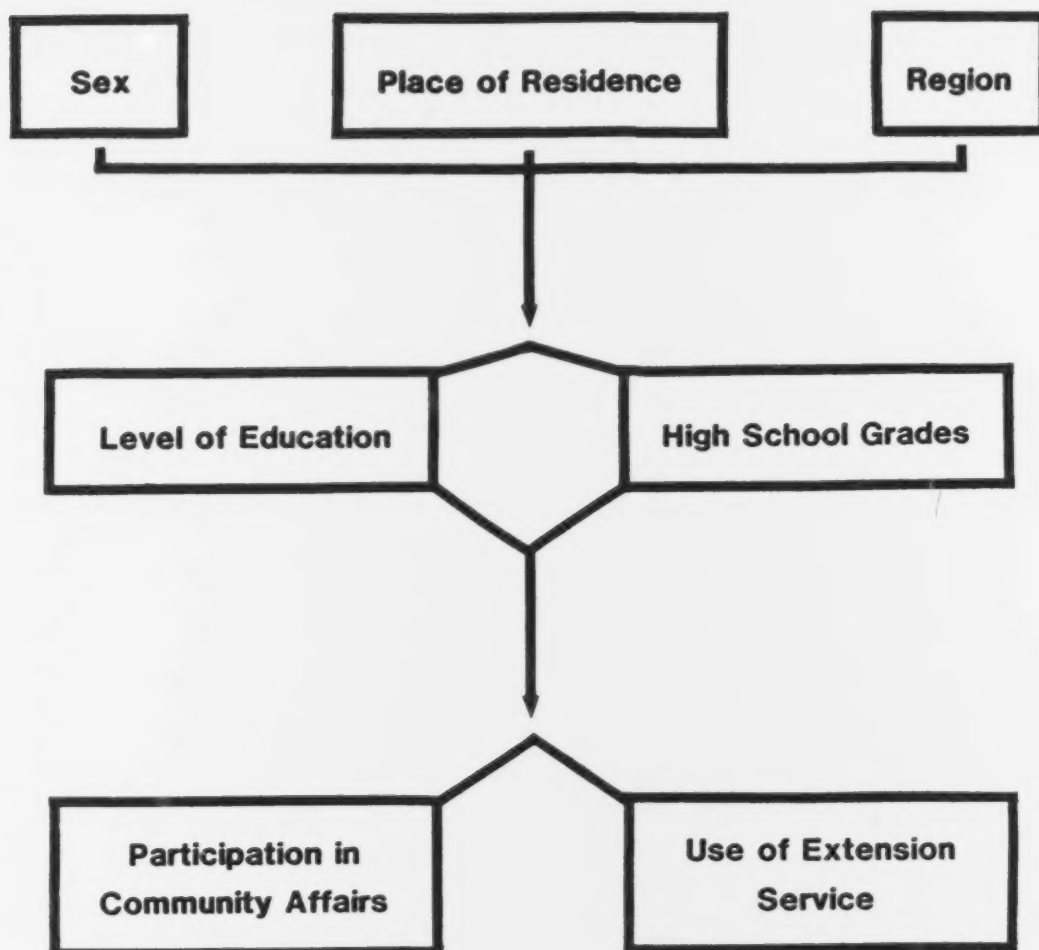


**Figure 3: Path Model of Participation in Community Affairs
by Nonparticipants in Past Youth Programs**

former participants in the 4-H program. The coefficients convert variables to the same measurement metric. However, when comparisons are to be made across different groups, for example between similar variables of 4-H alumni and former participants of other youth programs, unstandardized regression coefficients were used. (Specht and Warren, 1976; Schoenberg, 1972). Tests of significance were conducted for each comparison. Only descriptive comparisons, however, were made between all former participants in youth programs and nonparticipants since specification of their two models differed.

FINDINGS

The overall objective of this study is to determine the impact of participation in youth programs such as 4-H on the development of individuals' life skills and their subsequent involvement in community activities. In support of that objective, this chapter of the report presents the findings of the national telephone survey following the youth-adult development process identified in Figure 1.

The findings are divided into two sections: First, former participants in 4-H (4-H alumni), participants in other youth programs (other participants), and nonparticipants (where appropriate) are compared according to: (1) their personal characteristics, (2) types of youth development activities, (3) their reactions and appraisals of the value of their youth development experiences, and (4) the intensity and scope of their participation in adult community activities. Second, the magnitude of the effects of background characteristics and youth learning experiences on the development of life skills and adult community involvement is investigated.

Personal Characteristics of Youth Program Participants and Nonparticipants

Several background characteristics were examined to identify potential differences among the three study groups. In Table 4, sex, race, age, residential characteristics and program era (time of membership) are compared. While almost equal percentages of males and females responded during the survey, some differences occurred elsewhere, particularly between past participants and nonparticipants in youth programs. Former 4-H'ers were primarily white, less than 50 years of age, had participated in 4-H prior to 1966, and resided most of their lives in rural areas. Fifty-three percent were reared on farms and

ranches, or in communities with less than 2500 population. Other youth program participants had similar characteristics but had lived most of their lives in urban areas. Sixty percent were reared in cities with 10,000 or more population. The majority of nonparticipants were white, older than 50 years of age, and while most were urban-reared, a large group (35%) had lived in rural areas. Overall, few minorities participated in the study compared to their representation in the general public. Nonparticipants had the largest representation from these racial groups with 20 percent.

Table 4: Sex, Race, Age, and Residential Characteristics of Respondents to the National 4-H Alumni Survey.

Background Characteristics (%)		4-H Alumni	Other Participants	Non-Participants	Total
Sex:	Male	50.5	48.6	48.1	48.6
	Female	49.5	51.4	51.9	51.4
	Sample Size	1646	10296	4363	16305
	Chi Square=27 df=2 p < .257				
Race:	White	93.3	92.6	80.3	89.4
	Black	4.7	4.1	13.1	6.5
	Mexican-American	.6	2.1	3.4	2.3
	Other	1.3	1.3	3.1	1.8
	Sample Size	1624	10203	4290	16117
	Chi Square=596.8 ^a df=10 p < .0001				
Age ^b :	18-29	21.6	20.8	13.4	18.9
	30-39	25.1	30.7	20.2	27.4
	40-49	25.3	17.6	11.3	16.7
	50-59	13.7	13.2	13.5	13.3
	60-69	9.7	10.6	23.3	13.9
	70-85	4.6	7.1	18.4	9.8
	Mean	42.3	42.7	51.3	45.0
	S.D.	14.1	15.3	18.0	16.4
	Sample Size	1619	10124	4247	15990
	F=456.0 p < .0001				

Table 4: (cont.)

Background Characteristics (%)	4-H Alumni	Other Participants	Non-Participants	Total
Program Era ^b :				
1975-85	12.8	12.3	--	12.4
1974-66	20.0	24.8	--	24.1
1965 and previous	67.2	63.0	--	63.5
Mean	27.5	27.3		
S.D.	14.0	14.7		
Sample Size	1646	10296		11942
Chi Square=17.3 df=3 p < .001				
Residence: Farm/Ranch	28.1	8.4	18.6	13.1
Open country	13.8	7.2	8.1	8.1
Town < 2500	10.9	6.2	8.3	7.2
Town 2500-10000	18.0	17.9	12.0	16.4
City 10000-50000	12.7	25.2	22.9	23.3
Metropolitan area	16.5	35.1	30.0	31.9
Sample Size	1619	10244	4314	16177
Chi Square=997.3 df=10 p < .0001				

^a Chi square test was calculated using six racial groups; "Other" includes Asians, American Indians, and Others.

^b Variable is temporarily categorized for convenience of presentation.

Educational attainment and achievement characteristics are reported in Table 5. A large majority of each group had at least high school education. Participants of other youth programs were slightly more likely to have earned college and professional degrees. Nonparticipants reported the least attainment; 29 percent failed to graduate from high school compared to 8 percent or less of the other two groups. To determine educational achievement, all respondents were asked to describe their high school academic grade performance. Achievement patterns were similar across each group. Five percent or less reported grades lower than a C average, while 57 percent or more claimed achieving B and higher averages.

Table 5: Educational Attainments and Achievements of Respondents to the National 4-H Alumni Survey.

Educational Attainment and Achievement (%)	4-H Alumni	Other Participants	Non-Participants	Total
Level of Education:				
Grammer	.9	0.5	13.1	3.9
Some high school	7.2	4.7	15.8	7.9
High school graduate	35.1	28.0	30.2	29.3
Military/Vocational	5.3	5.1	4.5	4.9
Some college	24.0	25.7	16.2	23.0
College graduate	18.0	22.9	13.1	19.8
Professional degree	9.5	13.2	7.2	11.2
Sample Size	1626	10230	4314	16170
Chi Square=2154.5	df=12	p < .0001		
Academic Achievement:				
D's	.5	0.9	1.4	1.0
C's and D's	2.7	4.1	4.0	3.9
C's	8.7	7.4	8.2	7.7
B's and C's	24.1	26.4	29.8	27.0
B's	20.1	20.2	18.3	19.7
A's and B's	28.9	26.9	24.1	26.4
Mostly or all A's	15.1	14.2	14.2	14.2
Sample Size	1594	10055	3594	15243
Chi Square=74.8 ^a	df=14	p < .0001		

^a Chi square test was calculated using eight grade categories; mostly or all A's is a combination of two categories.

Employment and income patterns were similar for 4-H alumni and other participants, but as indicated in Table 6, a slight age bias existed among nonparticipants. Almost 65 percent of all youth program participants, including 4-H, were either self-employed or had full-time work. This compares to only 51 percent of the nonparticipants. A disproportionate share of nonparticipants were retired or disabled (28% compared to less than 14% of each of the other groups). As expected, these employment differences affected levels

of total family income. Among 4-H alumni, 18 percent earned less than \$15,000, compared to 19 percent of other participants and 35 percent of the nonparticipants. At higher income levels, 41 and 44 percent of 4-H alumni and other participants, respectively, reported incomes above \$30,000. This contrasts to only 31 percent of nonparticipants.

Table 6: Employment and Income Characteristics of Respondents to the National 4-H Alumni Survey.

Employment and Income Characteristics (%)	4-H Alumni	Other Participants	Non- Participants	Total
Employment Status:				
Self-employed	13.8	13.1	12.4	13.0
Work full-time	52.7	51.1	38.4	47.9
Work part-time	8.7	8.4	6.3	7.9
Unemployed	2.2	1.6	2.4	1.9
Retired/Disabled	12.1	13.8	28.2	17.5
Student	2.3	2.3	3.0	2.5
Homemaker	8.3	9.7	9.2	9.4
Sample Size	1627	10244	4303	16174
Chi Square=544.6 df=14 p < .0001				
Total Family Income:				
Under \$5,000	3.1	3.2	11.1	5.1
\$ 5,000 to \$10,000	5.8	7.3	14.5	8.9
\$10,000 to \$15,000	9.5	8.6	9.9	9.0
\$15,000 to \$20,000	13.4	11.6	12.9	12.1
\$20,000 to \$25,000	13.5	11.9	9.2	11.4
\$25,000 to \$30,000	13.2	13.6	11.2	12.9
\$30,000 to \$35,000	10.7	9.6	8.4	9.4
\$35,000 to \$40,000	8.4	9.7	6.1	8.7
\$40,000 to \$45,000	11.1	9.0	5.7	8.4
Over \$50,000	11.2	15.6	11.0	14.0
Sample Size	1481	9327	3574	14382
Chi Square=689.1 df=18 p < .001				

The final examined set of personal characteristics regarded size of family and children's participation in youth programs. In Table 7, findings on size

of household, number of children, number of children in 4-H, and number of children in other youth programs are presented. Overall, the average size of household for each group was 3 persons. Nonparticipants were slightly more likely than others to have a one-person household and no children. The average number of children for all groups was 2.

Several findings are notable about children's current participation. Respondents who had children 9 years of age and older were queried about how many of these children participated in 4-H. While large majorities of each group indicated none of their children participated, 36 percent of the 4-H alumni had children in the 4-H youth program versus 18 percent of the other participants and 22 percent of the nonparticipants. Compared to participation in 4-H, participation of children in other youth programs was much higher, partially because age of the children was not restricted to nine and older. Also, children of 4-H alumni and other participants were more likely to participate in other youth programs. Overall, 45 percent of the 4-H alumni and 44 percent of other participants had children who were members of other programs, while 31 percent of the nonparticipants had children in such programs.

Summary. Respondents in each study group have a wide variety of background characteristics. Overall, 4-H alumni and past participants of other youth programs were more alike than nonparticipants in terms of their race, years of age, era of participation, level of educational attainment, high school academic achievement, employment status, total family income, and number of children participating currently in youth programs. Nonparticipants had slightly more minority representation, were older, and had lower levels of education attainment, employment status, and family income. Differences between 4-H alumni and other respondents were apparent with regard to where they resided most of their life and to their children's participation in youth

Table 7: Family Characteristics of Respondents to the National 4-H Alumni Survey.

Family Characteristics (%)	4-H Alumni	Other Participants	Non-Participants	Total
Size of Household:				
One	11.3	14.9	21.3	16.3
Two & three	52.9	51.2	53.9	52.1
Four & five	31.2	30.1	21.0	27.8
Six & more	4.6	3.7	3.9	4.0
Mean	3.1	2.9	2.6	2.8
S.D.	1.4	1.4	1.5	1.4
Sample Size	1625	10190	4314	16129
F=82.2 p < .0001				
Number of Children:				
None	24.1	32.2	33.8	31.8
One	18.2	15.0	15.3	15.4
Two & three	43.9	39.8	37.7	39.6
Four & five	11.4	9.7	10.2	10.0
Six & more	2.4	3.3	3.2	3.2
Mean	1.9	1.7	1.7	1.7
S.D.	1.6	1.6	1.7	1.6
Sample Size	1609	10084	4280	15973
F=8.6 p < .0002				
Number of Children in 4-H:				
None	63.9	81.5	77.8	78.6
One	17.0	9.8	12.6	11.3
Two & three	15.9	7.8	7.2	8.5
Four & more	3.2	0.9	2.4	1.6
Mean	.7	0.3	0.4	0.4
S.D.	1.3	0.8	0.9	0.9
Sample Size	947	5394	2409	8750
F=70.9 p < .0001				
Number in Other Youth Programs:				
None	55.3	56.1	69.4	59.5
One	23.2	20.0	15.3	19.1
Two & three	18.4	21.5	12.7	18.8
Four & more	3.1	2.4	2.5	2.6
Mean	.8	0.8	0.6	0.7
S.D.	1.1	1.1	1.1	1.1
Sample Size	1139	6529	2757	10425
F=39.8 p < .0001				

programs. Alumni were reared primarily in rural areas and were more likely to have children in a 4-H program. Conversely, other respondents were reared primarily in urban areas and were more likely to have children in different youth programs. However, less than half of all respondents with children reported participation activity in youth programs for their children.

Youth Development Activities

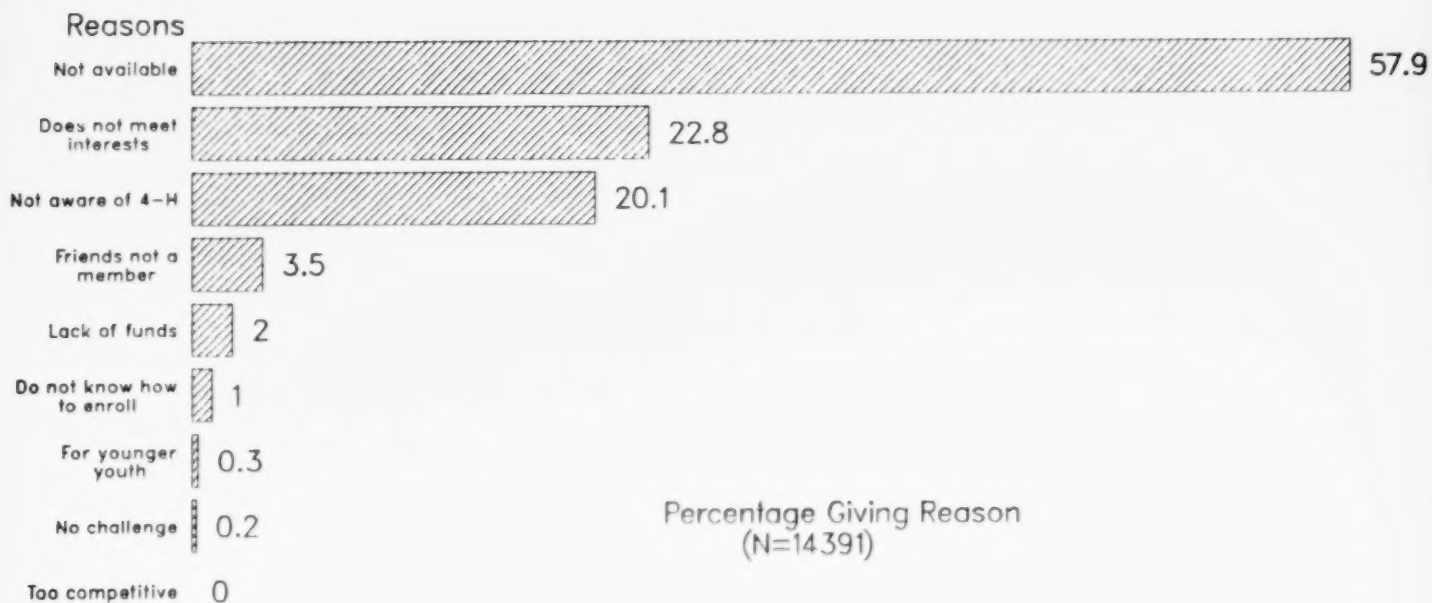
The second set of comparisons to be reported are the type of youth programs respondents participated in as youth. This section begins by focusing on the image of 4-H followed by types of organizations to which respondents belonged and activities in which they participated. The report then narrows its focus to 4-H alumni and their activities.

Image of 4-H

Although the 4-H program is one of the largest nontraditional educational programs for youth in the United States, its public image has been one of helping farm youth develop farm skills (SEA-Extension, 1980). As explained earlier, one reason for this image is the close ties of 4-H to the colleges of agriculture in each state land grant university. This study examines the impact, if any, of the "farm" image on 4-H enrollment in two ways. First, non4-H respondents were asked why they had not joined 4-H as youth. Second, those who had participated in 4-H were asked their perceptions of the level of prestige others attributed to membership in 4-H.

The responses of non4-H'ers are presented in Figure 4. Their primary reason for not joining was lack of availability. Since two-thirds of the non4-H'ers were raised in places where 4-H is assumed to be well-known (50,000 or less, Table 4), lack of awareness of 4-H rather than image may be a more

Figure 4: Reasons Given by Non4-H Respondents
For Not Joining 4-H as Youth



realistic barrier to participation. To further support that point, less than one-fourth said that 4-H did not meet their interests.

The second measure of the "image" problem was to ask 4-H alumni their perceptions of how others view 4-H in terms of honor and prestige of membership. As reported in Figure 5, 42 percent of the 4-H alumni believe that youth in the community would rank 4-H at the top or next to the top in prestige. Based on the findings of Figures 4 and 5, it would appear that the image of 4-H was not as limiting a factor to enrollment as was availability.

Organizations and Activities

The organizations to which non4-H'ers most often joined are illustrated in Figure 6. Nearly two-thirds were members of scouts and/or church groups. The average age for joining other organizations was 9.5 and the average length of participation was 6 years. In comparison, 4-H alumni joined 4-H at an average age of 10.6 and participated for 4 years.

Figure 7 reflects rates of participation by 4-H alumni and other participants in four activities. Approximately forty percent of each group served as officers or committee members and one-half participated in community service projects. However, less than ten percent participated in exchange programs or in national trips. A comparison of 4-H alumni to other participants for these four activities revealed no significant difference in participation in leadership roles and small but significant differences in participation in community service projects, exchange programs, and national trips (See Appendix D for Chi Square values of significant difference). These findings, along with those presented earlier on socioeconomic characteristics, reinforces the point that youth program participants are more alike than different.

Figure 5: 4-H Alumni Perceptions of How Other Youth View Prestige of Membership in 4-H

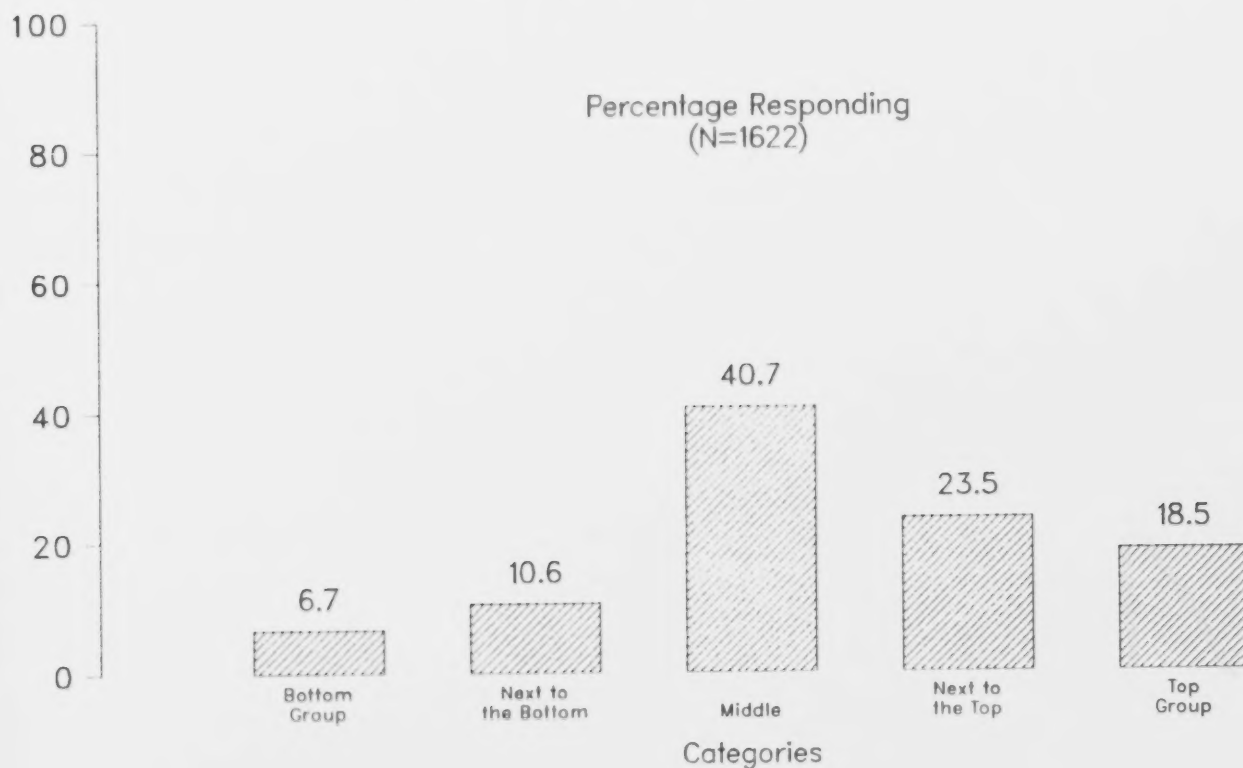


Figure 6: Organizations to Which Other Participants Held Membership as Youth

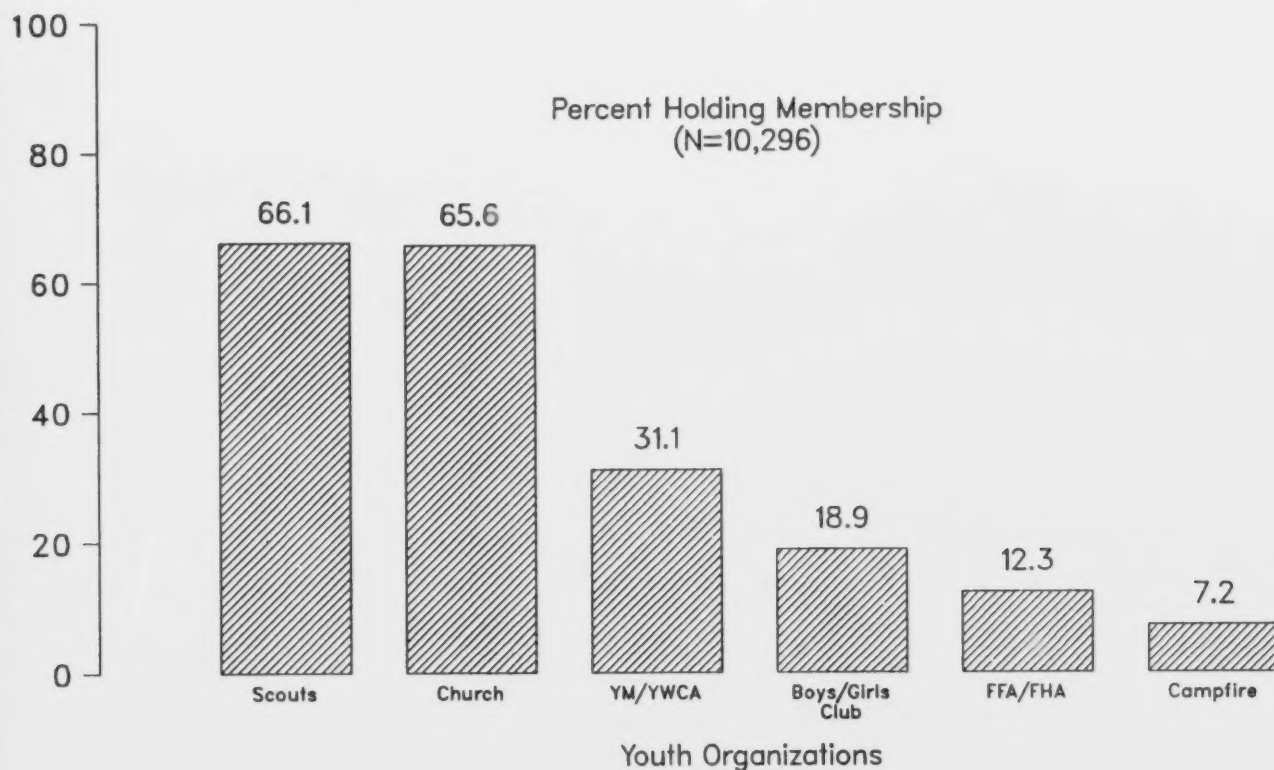
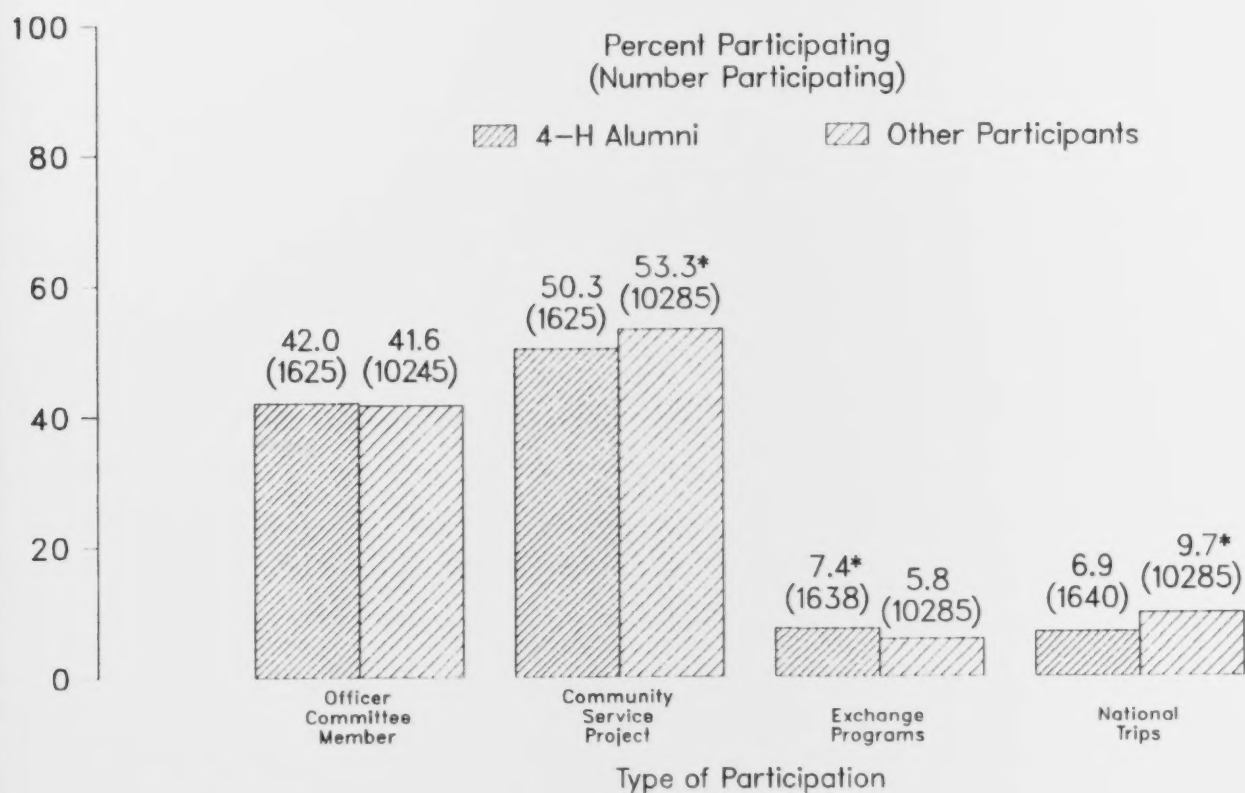


Figure 7: Comparison of Type of Participation by 4-H Alumni & Other Participants in Selected Organizations as Youth



* Significant difference in types of participation at $\alpha=0.05$.

4-H Alumni Activities

Types of Activities. 4-H alumni participated in a wide variety of 4-H activities during their youth. Continuing trends started at the turn of the century, the most popular form of participation was organized clubs -- community, school, and project. This was followed by individual study, 4-H camps, and school enrichment programs. Although not illustrated in Figure 8, 71 percent reported participating in stock shows and fairs while 60 percent competed in different contests (demonstrations, judging, public speaking, fashion shows, etc.).

The experiential learning model upon which the 4-H program is based depends heavily upon the development of subject-matter knowledge taught in organized settings and reinforced through practical situations. As reported in Figure 9, 4-H alumni most valued the inputs and teachings of adult volunteer leaders, family members, and club meetings. This strongly supports the "learn by doing" model of being taught by adult volunteers in a club setting and receiving encouragement and reinforcement in a learning environment from family members.

Nearly 53 percent of the 4-H alumni reported having membership in other organizations -- primarily church groups and scouts (Figure 10). A comparison of 4-H alumni membership to non4-H alumni membership (Figure 6) indicates that 4-H alumni were more active in FFA/FHA while other participants were more active in all other organizations compared.

Those 4-H alumni who held membership in other organizations were asked to compare their 4-H experiences to those received in other youth organizations and indicate which experiences were more helpful. The results of the comparisons, presented in Figure 11, indicate that a significant number rated 4-H as more helpful in gaining knowledge and skills and in developing a feeling of

Figure 8: 4-H Alumni Participation in 4-H Activities

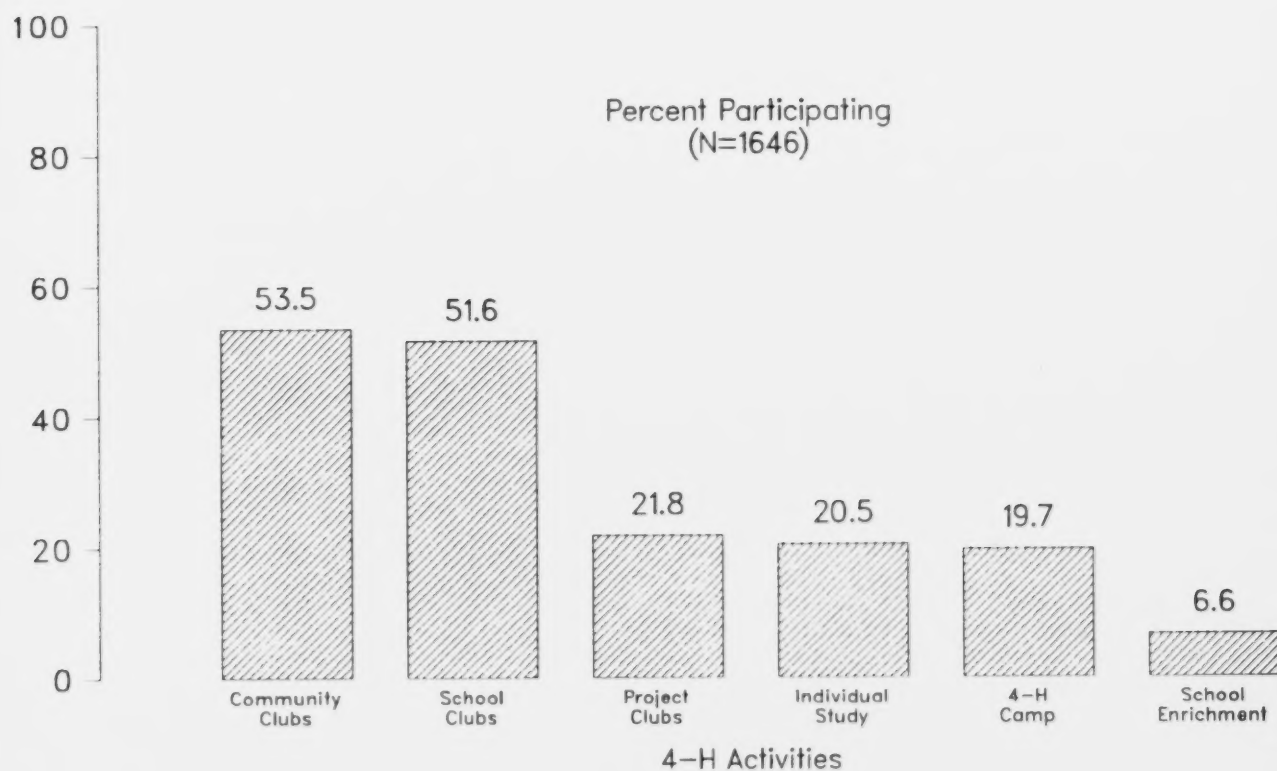


Figure 9: 4-H Alumni Ratings of Helpfulness of Information Sources in Support of Project Work

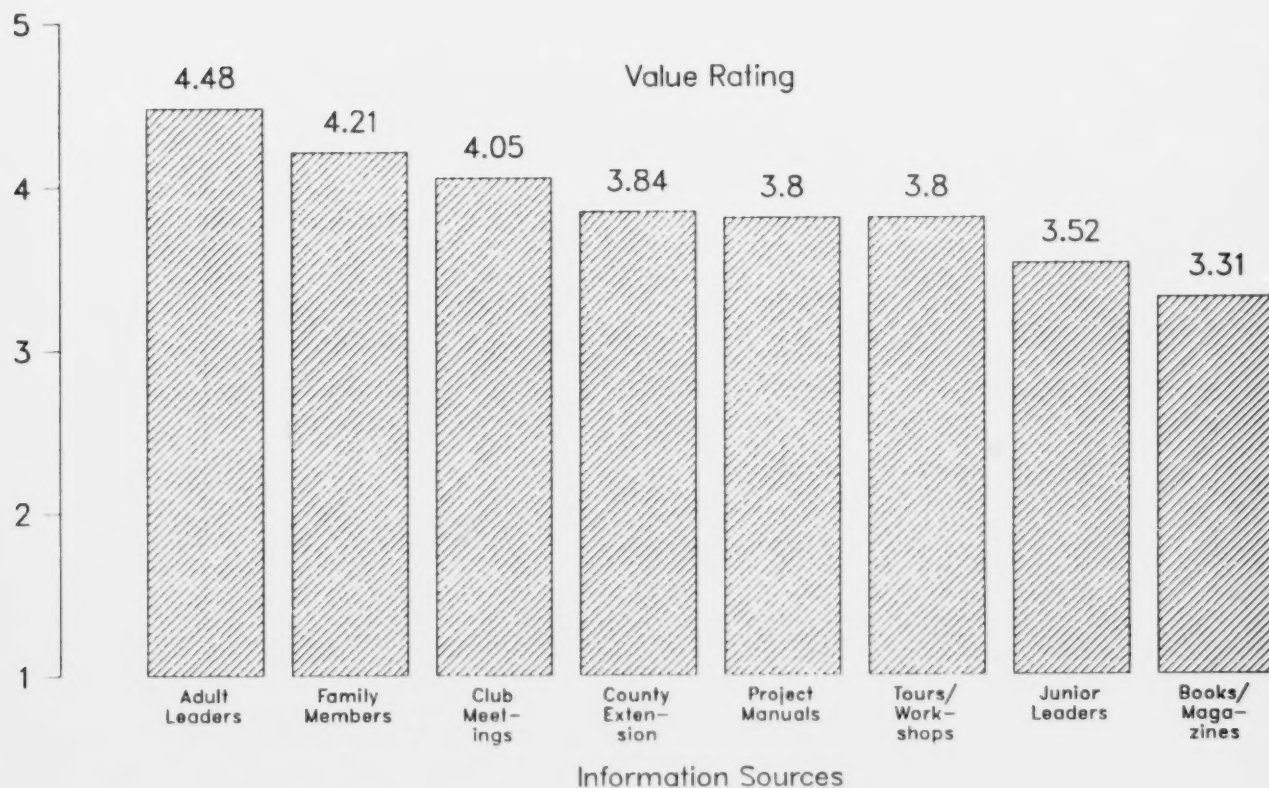
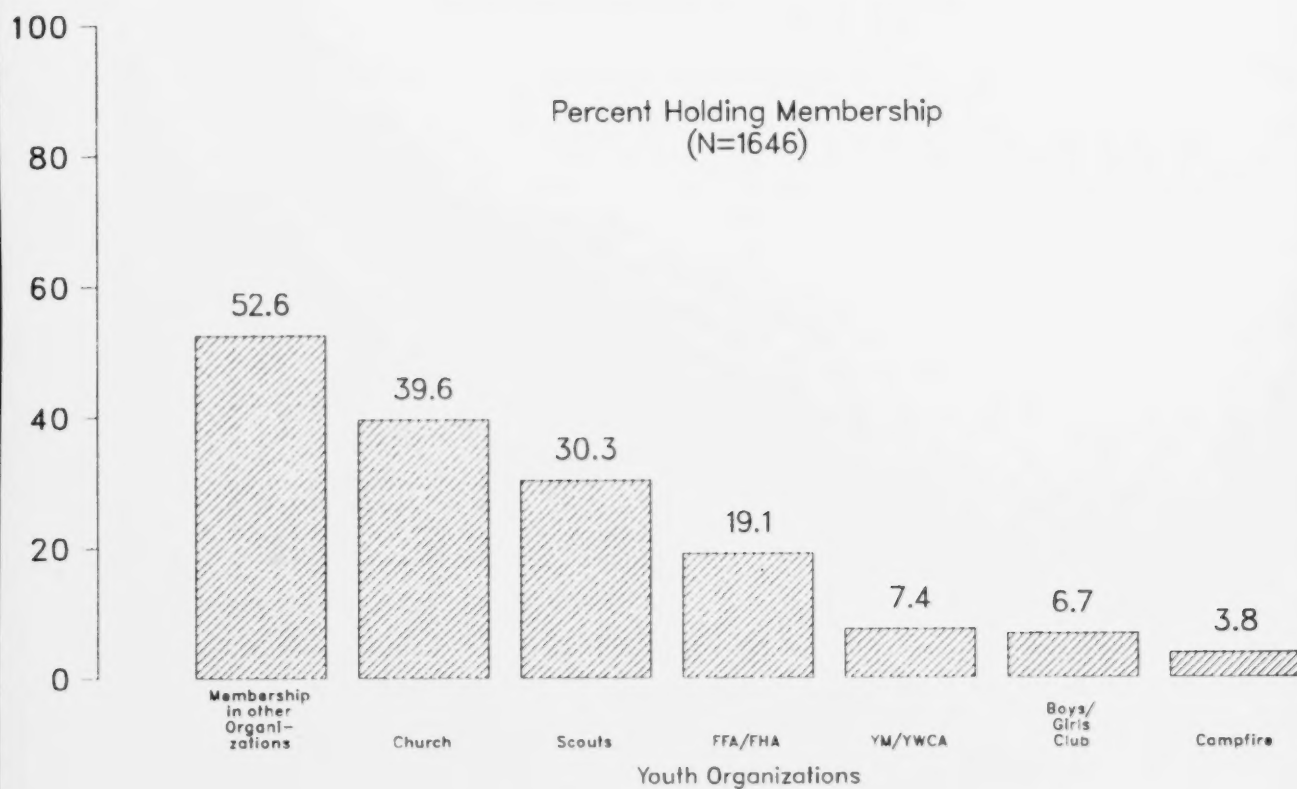


Figure 10: Other Organizations to Which 4-H Alumni Held Membership as Youth



self-worth. Conversely, a significant number of 4-H alumni felt that their experiences in other organizations were more helpful in developing leadership skills and receiving the most responsibilities. Helpfulness in development of skills in communications and cooperation were evenly divided between 4-H and other organizations. (See Appendix D for Chi Square values of significant difference.)

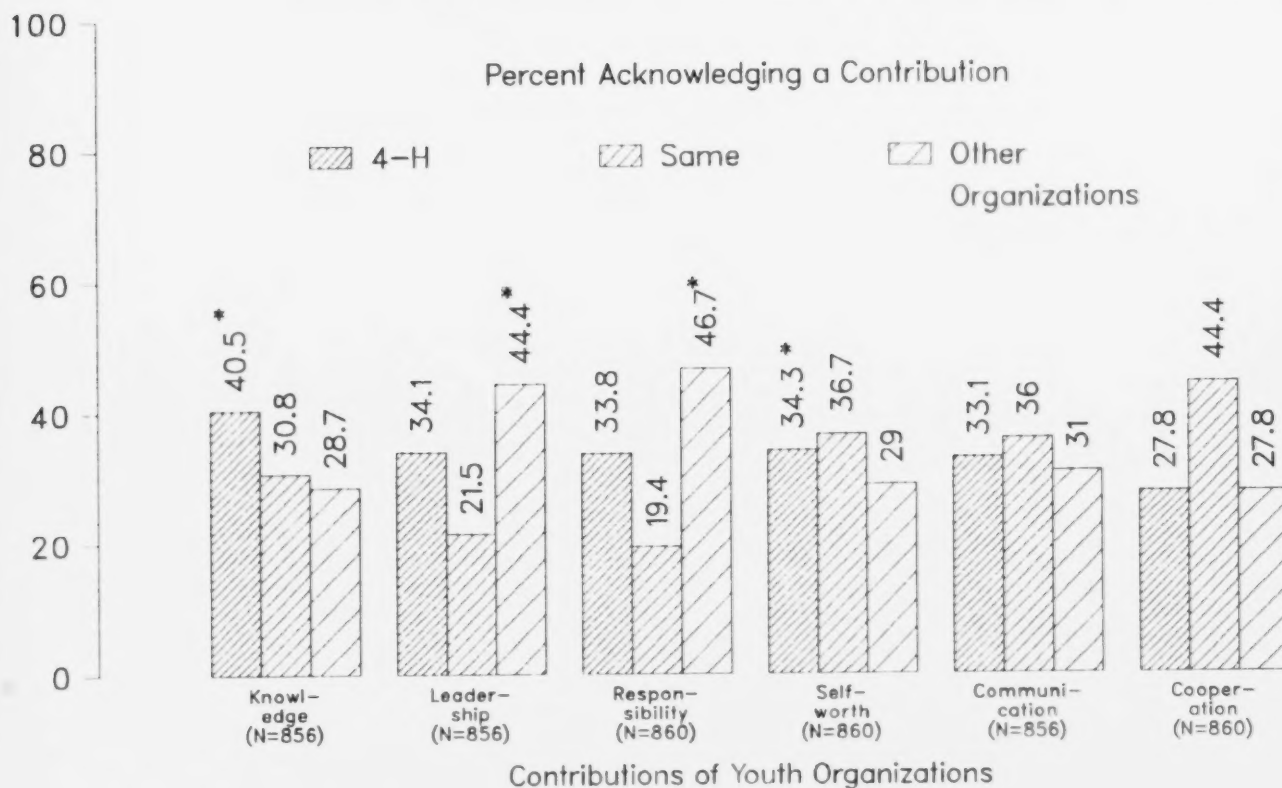
Although the 4-H program is designed for youth 9 to 19, the majority of youth end their membership before their age eligibility expires. In fact, the study found that 59 percent of the 4-H alumni dropped out of 4-H. Those who did drop out of 4-H were asked why. As reported in Figure 12, the primary reason for dropping out was that 4-H no longer met their interests. Although a common belief for 4-H dropouts is that it is for younger kids, only about one-fifth of the 4-H alumni cited that as being an important reason for stopping their participation.

Summary of 4-H alumni activities. Organized clubs and competition were the most popular forms of participation in 4-H. Further, 4-H alumni most valued the inputs and teachings of adult volunteer leaders, family members, and club meetings. Finally, of those alumni who also participated in other organizations, a slight majority rated their 4-H experiences higher in gaining knowledge and skills and developing a feeling of self-worth. Conversely, a slight majority rated non4-H experiences over 4-H in developing leadership skills and receiving responsibilities.

Value of Youth Development Experiences

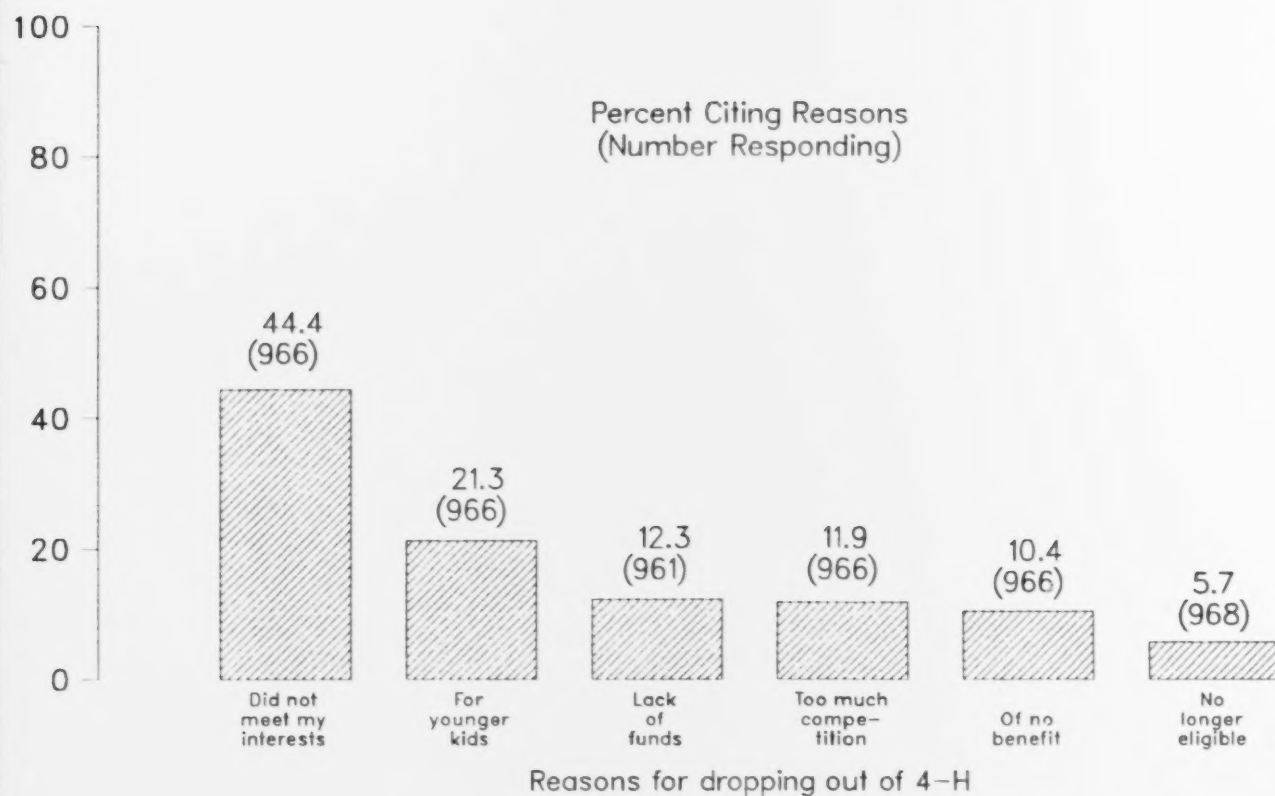
The third section of comparisons focuses on the value that both 4-H alumni and other participants placed on different types of youth organizational experiences. As explained in the methodology section, the higher the rating, the more valuable the experience. In addition, the 4-H alumni ratings of the

Figure 11: 4-H Alumni Comparisons of Contributions of 4-H and Youth Organizations in Which They Held Membership



* Significant difference in comparison of contributions of youth organizations at $\alpha=0.05$.

Figure 12: Reasons Given by 4-H Alumni for Dropping Out of 4-H



quality of their experiences will be compared to those of other participants. The determination of significant differences between group ratings are based on t values of significant differences between means as reported in Appendix E.

Usefulness of Experiences

As reported in Figure 13, the most useful experiences for both 4-H alumni and other participants came from contact with other people in the organization. Second in usefulness was competition/activities followed by projects individuals worked on. It should be noted also that, while the order of the ratings was the same for both groups, 4-H alumni rated their experiences significantly higher than did other participants.

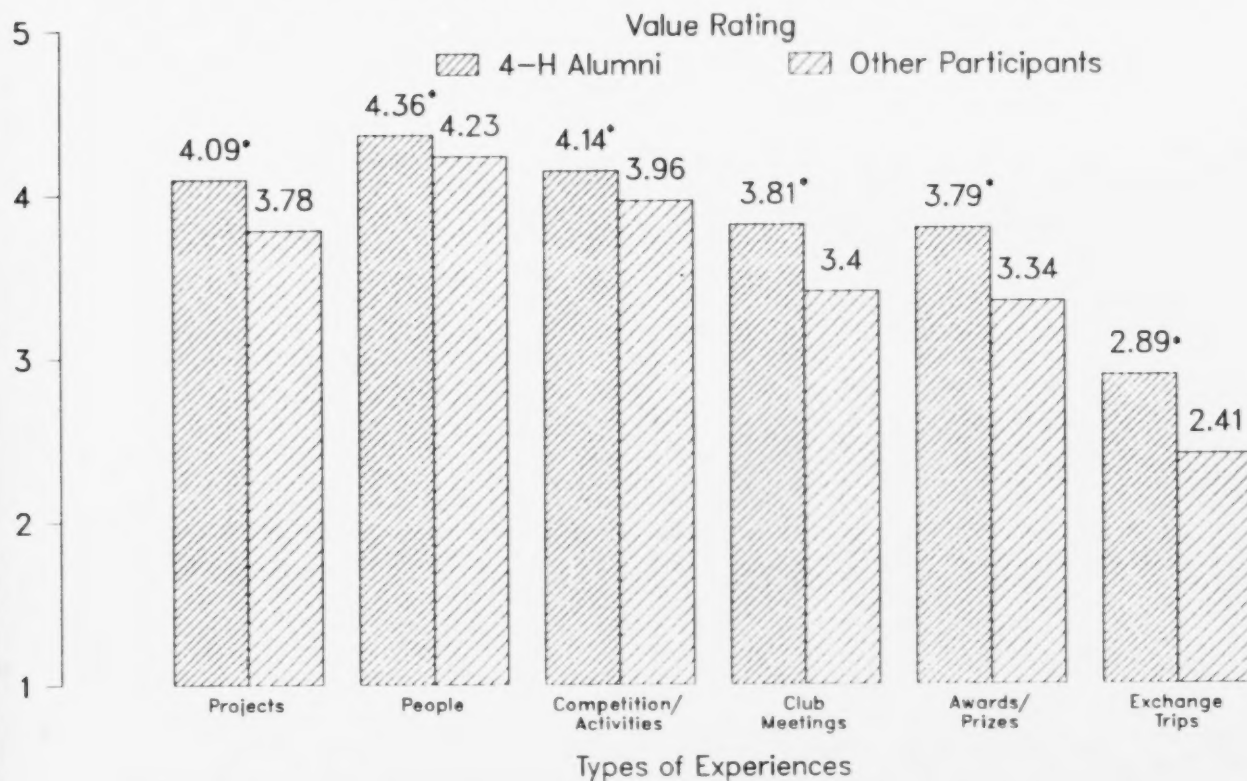
Challenge and Responsibilities

Figure 14 reflects responses to the frequency with which individuals experienced opportunities for challenges and responsibilities. For both groups, opportunities to develop skills and make a contribution received the highest ratings. Conversely, leadership opportunities received the lowest rating among 4-H alumni, while involvement in making important decisions was rated lowest by other participants. In comparing the ratings of 4-H alumni to that of other participants, 4-H ratings were significantly higher for opportunities for challenging tasks, making important decisions, and freedom to develop skills. Other participant ratings were significantly higher for leadership opportunities. It should be noted also that the majority of both groups wanted more leadership opportunities.

Personal Development

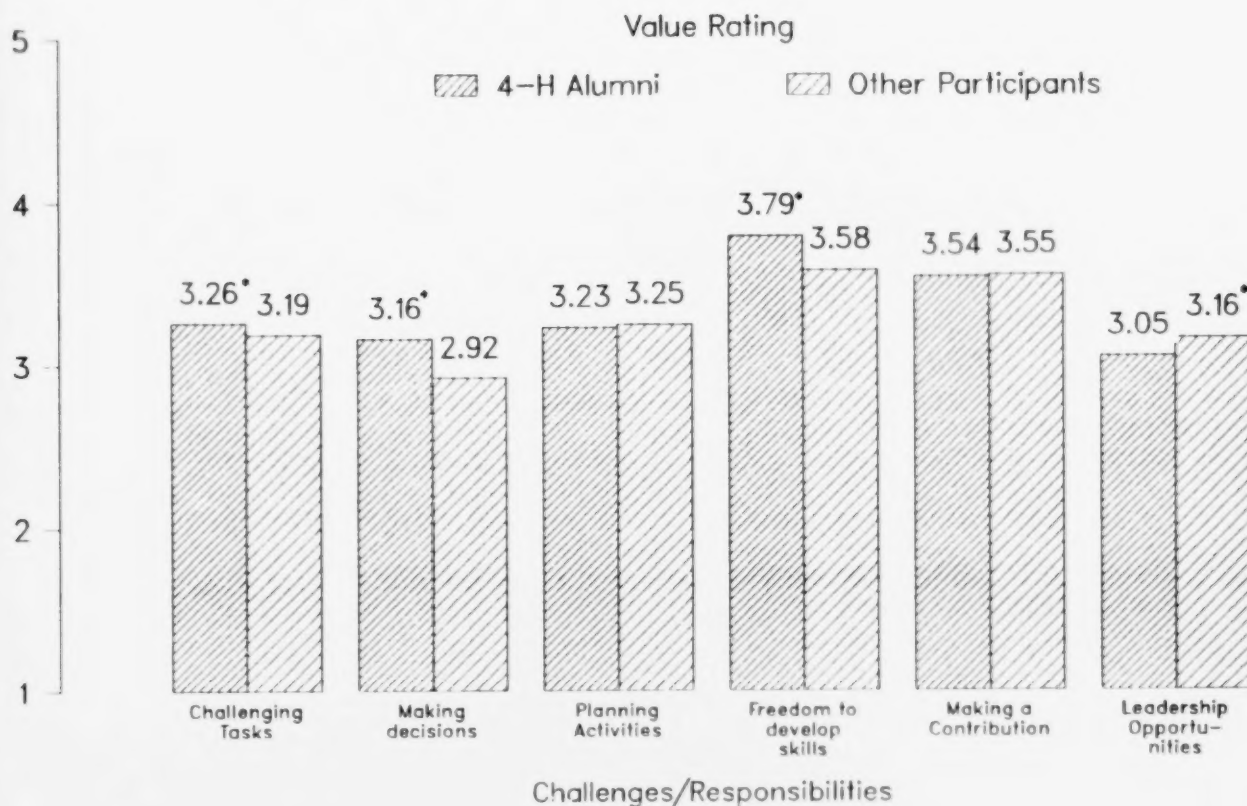
Youth development programs can contribute to personal development in a number of ways. To determine the contribution of organizational experiences on

Figure 13: Comparison of Ratings of 4-H Alumni & Other Participants on Usefulness of Experiences in Youth Organizations



* Significant difference in mean ratings at $\alpha=0.05$.

Figure 14: Comparison of Ratings of 4-H Alumni & Other Participants on Frequency of Opportunities for Challenges & Responsibilities Offered by Organizations to Which They Held Membership as Youth



* Significant difference in mean ratings at $\alpha=0.05$.

personal development, 4-H alumni and other participants were read a set of nine different areas of personal development and asked to rate the contribution of their organizational participation to each developmental area. As reported in Table 8, the largest contributions to personal development for both groups were learning to work with others and developing a sense of responsibility. Acquiring skills necessary for employment and involvement in community activities were rated by both groups as making the least contribution to personal development. Table 8 also indicates that 4-H alumni ratings were significantly higher than those of other participants for all nine activities. One implication of the consistency of higher ratings for 4-H alumni is that 4-H makes a strong contribution to the personal development of all its members.

Table 8: Ratings of 4-H Alumni and Other Participants on Contributions to Personal Development Provided by Organizations to Which They Held Membership as Youth.

Personal Development	4-H Alumni		Other Participants	
	Mean	Standard Error	Mean	Standard Error
Pride in Accomplishment	4.28 ^a	.022	3.93	.010
Self-confidence	4.25 ^a	.021	3.97	.010
Working with Others	4.38 ^a	.020	4.31	.008
Leadership Skills	3.89 ^a	.026	3.64	.012
Ability to Communicate	3.87 ^a	.025	3.71	.011
Employment Skill	3.17 ^a	.032	2.78	.014
Responsibility	4.30 ^a	.021	4.04	.010
Setting Goals	4.20 ^a	.023	3.67	.011
Community Involvement	3.75 ^a	.029	3.52	.012

^aSignificant difference in mean ratings at $\alpha = .05$.

Attitudes Toward Youth Programs

Many youth development programs are faced with complaints about too much competition and too few relevant programs of substance. To find out how respondents from both groups felt about these and other points, they were asked their opinions on six issues. As reported in Table 9, the strongest agreement by both groups was that knowledge and skills gained through participation in youth programs have benefited them in their adult life. Second in degree of consensus for the 4-H alumni was that parents and leaders benefited in learning from 4-H projects while other participants' belief that their organization kept young people busy and out of trouble more than other youth programs received strong support. The vast majority of both groups disagreed with the statement that there was too much emphasis on competition and awards. The majority also disagreed with the statement that programs of their organization had little to offer junior high and high school youth. In comparing attitude ratings of the two groups, 4-H alumni were significantly more supportive on all but one item -- competition and awards. On that point, both groups were equally supportive of their respective organizations.

Comparison of Development Experiences by Membership Era

Youth development programs, like American society, have changed over the years. The content and direction of programs offered through 4-H and other youth development programs have had to adjust to changes in many areas including population, lifestyles, communications, technology, science, and education.

To determine if these changes in program direction and content had an impact on the development of life skills of program participants, the responses of 4-H alumni and other participants to selected experiences were analyzed by program era (see Table 4) utilizing Tukey's w-procedure. The analysis was designed to detect differences in mean ratings in the value of experiences when

Table 9: Attitudes of 4-H Alumni and Other Participants Toward Youth Development Programs in Which They Participated as Youth.

Youth Development Component	Attitude Rating			
	4-H Alumni		Other Participants	
	Mean	Standard Error	Mean	Standard Error
Too much emphasis on competition & awards	1.50	.033	1.59	.014
Had little to offer Jr. High & High School youth	0.99 ^a	.031	1.61	.015
Kept young people busy & out of trouble more than other youth programs	4.16 ^a	.026	3.98	.011
Parents & leaders benefited in learning from projects	4.33 ^a	.020	3.69	.012
Awards program positive incentive	4.05 ^a	.026	3.48	.013
Knowledge & skills gained through participation benefit members in their adult life	4.49 ^a	.019	4.04	.010

^aSignificant difference in mean attitude ratings at $\alpha = .05$.

controlling for the time period of participation. As reported in Appendix F, some significant differences were found between program eras for both 4-H alumni and other participants. Among 4-H alumni, for example, the most recent alumni had significantly higher ratings on developing leadership skills, opportunities for challenging tasks, making important decisions and leadership opportunities. Conversely, earlier era 4-H alumni had higher ratings on offerings for older youth and usefulness of club meetings.

For other participants, there were significantly higher ratings by more recent former participants for benefits to parents and leaders, usefulness of projects, making important decisions, and development of skills. Experiences rated higher by participants of earlier program eras included emphasis on competition and offerings for older youth.

When comparing 4-H program eras to other participant program eras, 4-H alumni ratings were equal to or greater than other participant ratings on all items except leadership opportunities in earlier program eras. Thus, while changes have been occurring over time in most youth programs, the quality of the experience in 4-H has consistently been viewed by 4-H alumni as better than the experiences reported by other participants.

In essence, changes in 4-H programming have had the largest impact on 4-H alumni ratings of leadership opportunities and skills while other participants were more satisfied with skill development. For both groups, however, programming for older youth decreased in value rating over program eras. (See Appendix F for statistical summary of results.)

In summary of the value of youth development experiences, the most useful experiences for both 4-H alumni and other participants came from contact with other people in the organization. In addition, opportunities to develop skills and make a contribution to the organization were most highly rated by both

groups. While a comparison of 4-H alumni by program era revealed that more recent alumni were more satisfied with leadership opportunities than those from earlier times, it should be noted that the majority of both groups wanted more leadership opportunities. Finally, the largest contributions to personal development for both groups were learning to work with others and developing a sense of responsibility. Based on comparisons of ratings of experiences, 4-H alumni were more satisfied with their organization's contributions to personal development than were participants of other organizations.

Educational and Career Expectations

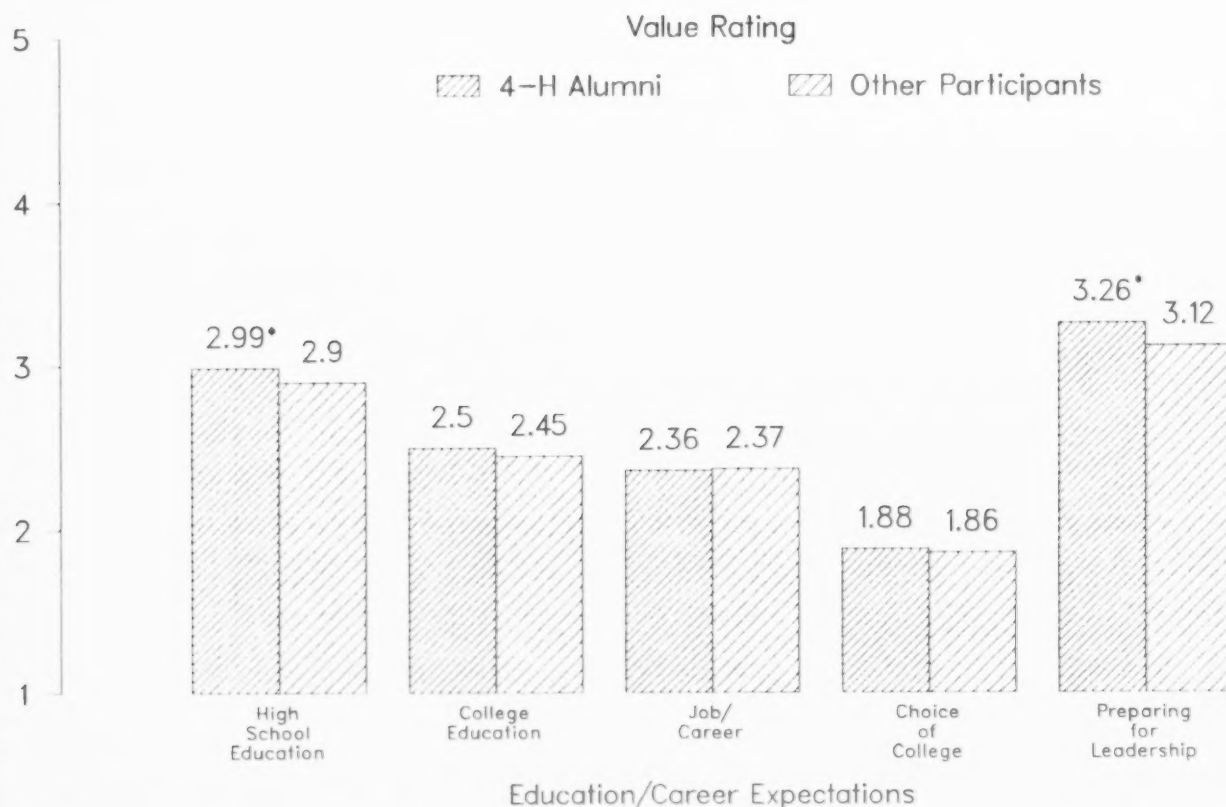
The final area in which both 4-H alumni and other participants were asked the value of their experiences related to education and career expectations. As illustrated in Figure 15, the highest ratings of both groups were preparation for leadership and continuing their education through high school. In both cases, 4-H alumni rated the value of their experiences significantly higher than did other participants. No other rating comparisons were significantly different.

Factor Analysis

The ratings of 4-H alumni and other participants on the value of their experiences (and reported in Figure 14 and Tables 8 and 9) were submitted to common factor analysis to determine whether the interrelationships between various ratings could be accounted for by unique factors or scales. If items could be added to form composite scales, analysis of the development and impact of life skills in the Youth-Adult Organizational Participation Model could be simplified.

The principal-axis factor method was applied to three sets of value ratings -- challenges, personal development, and attitude toward their youth

Figure 15: Ratings of 4-H Alumni & Other Participants on the Influence of Organizations in Which They Held Membership as Youth on Their Educational and Career Expectations



* Significant difference between means at $\alpha=0.05$.

organization. Results of the factor analyses are presented in Tables 10 through 12. In each case, a single factor (or scale) was produced with an eigenvalue greater than one. With one exception, the three factors had moderate to high loadings for all variables. The exception was found in the attitude factor where the items "emphasis on competition" and "little to offer..." had very low loadings for both groups. Although scales are often built utilizing only those variables having high loadings on a particular factor, this study will utilize all items including those having low factor loadings. This procedure has the advantage of giving the best estimate of a given factor because it controls the influence of all items in the scale. The proportions of variance explained by each factor for 4-H alumni and other participants for CHALLENGE was 41 percent (both groups), DEVELOPMENT 49 percent (4-H alumni) and 46 percent (other participants) and for ATTITUDES was 18 percent (both groups). These findings support their use as scales in future analyses.

In addition to establishing unique scales for subsequent analysis, factor analysis also can be utilized in identifying variables that make the largest contribution to explaining variation in value ratings. This variation is accounted for by factor loadings which may be interpreted as correlation coefficients between the derived factor and the variables being factored.

In reviewing factor loadings of 4-H alumni ratings of opportunities for challenges and responsibilities (Table 10), the feeling of making a contribution (.714), involvement in planning activities (.685), and making important decisions (.676) made the largest contributions to explaining the variation in 4-H alumni ratings of frequency of opportunities for challenges and responsibilities. For other participants, the primary variables were making important decisions (.719), leadership opportunities (.683), and making a contribution (.647).

Table 10: Principal Factor Loadings and Standardized Scores for Respondent Ratings of Frequency of Opportunities for Challenges and Responsibilities.

Variable	<u>Factor Loadings</u>		<u>Standardized Scores</u>	
	4-H Alumni	Other Participants	4-H Alumni	Other Participants
Challenging Tasks	.533	.533	.144	.154
Making Decisions	.676	.719	.224	.268
Planning Activities	.685	.641	.231	.200
Freedom to Develop Skills	.546	.582	.149	.167
Making a Contribution	.714	.647	.262	.207
Leadership Opportunities	.660	.683	.213	.229
Eigenvalue	2.45	2.46		
Explained Variation	40.90	41.00		
Next Highest Eigenvalue	0.06	0.09		

Factor loadings presented in Table 11 indicate that for both 4-H alumni and other participants respectively, development of self-confidence (.764,.749) and developing a sense of responsibility (.751,.745) were the most important variables in explaining ratings of ways youth programs contributed to personal development. In examining attitudes toward the organizations (Table 12), the most important variable for 4-H alumni was that knowledge and skills gained through participation in 4-H have benefited 4-H alumni in their adult lives (.563). For other participants, parent and leader benefits in learning from projects (.541) was most important in explaining variations in attitudes toward youth organizations in which they participated.

Table 11: Principal Factor Loadings and Standardized Scores for Respondent Ratings of Contributions to Personal Development.

Variable	Factor Loadings		Standardized Scores	
	4-H Alumni	Other Participants	4-H Alumni	Other Participants
Pride in Accomplishments	.642	.718	.109	.152
Self-confidence	.764	.749	.188	.175
Working with Others	.675	.705	.120	.141
Leadership Skills	.747	.731	.176	.163
Ability to Communicate	.727	.722	.150	.157
Employment Skill	.621	.341	.100	.045
Responsibility	.751	.745	.179	.175
Setting Goals	.720	.714	.146	.160
Community Involvement	.612	.591	.101	.097
Eigenvalue	4.38	4.16		
Explained Variation	48.70	46.20		
Next Highest Eigenvalue	0.37	0.23		

In summary of the factor loadings, it would appear that the more involved the individual in planning and decision making, the more challenges and responsibilities the individual incurred. In addition, the strongest contribution to personal development was experiences contributing to self esteem -- self confidence and responsibility. Finally, the benefits of knowledge and skills had a lasting impact on respondent attitudes towards the youth organizations to which they belonged.

Table 12: Principal Factor Loadings and Standardized Scores for Respondent Attitudes Toward Youth Organizations in Which They Held Membership.

Variable	<u>Factor Loadings</u>		<u>Standardized Scores</u>	
	4-H Alumni	Other Participants	4-H Alumni	Other Participants
Too much emphasis on competition & awards	.157	.036	.060	.018
Little to offer Jr. High & High School youth	.247	.272	.090	.129
No need for 4-H camping program	.322	--	.119	--
Kept young people busy & out of trouble more than other youth programs	.527	.496	.222	.255
Parents & leaders benefited in learning from projects	.540	.541	.228	.294
Awards program positive incentive	.392	.449	.149	.225
Agriculture & home economics should be the basis for 4-H projects	.453	--	.174	--
Knowledge & skills gained through participation benefit members in their adult lives	.563	.526	.247	.281
Eigenvalue	1.66	1.09		
Explained Variation	18.30	18.17		
Next Highest Eigenvalue	0.35	0.30		

Adult Participation in Community Activities

The fourth comparison to be reported concerns respondents' participation during the past two years in community events and programs conducted by the Extension Service. For each activity or organization--civic club, chamber of commerce, community events, agricultural group, political organization, industrial foundation, and church group--respondents reported whether they were members, attended at least 25 percent of its meetings, and were an officer or committee member. Figures 16 to 22 present comparisons of levels or intensity of participation by each of the three study groups (4-H alumni, participants of other organizations and nonparticipants). Chi Square values of significant differences for these variables are recorded in Appendix G.

Community Organizations

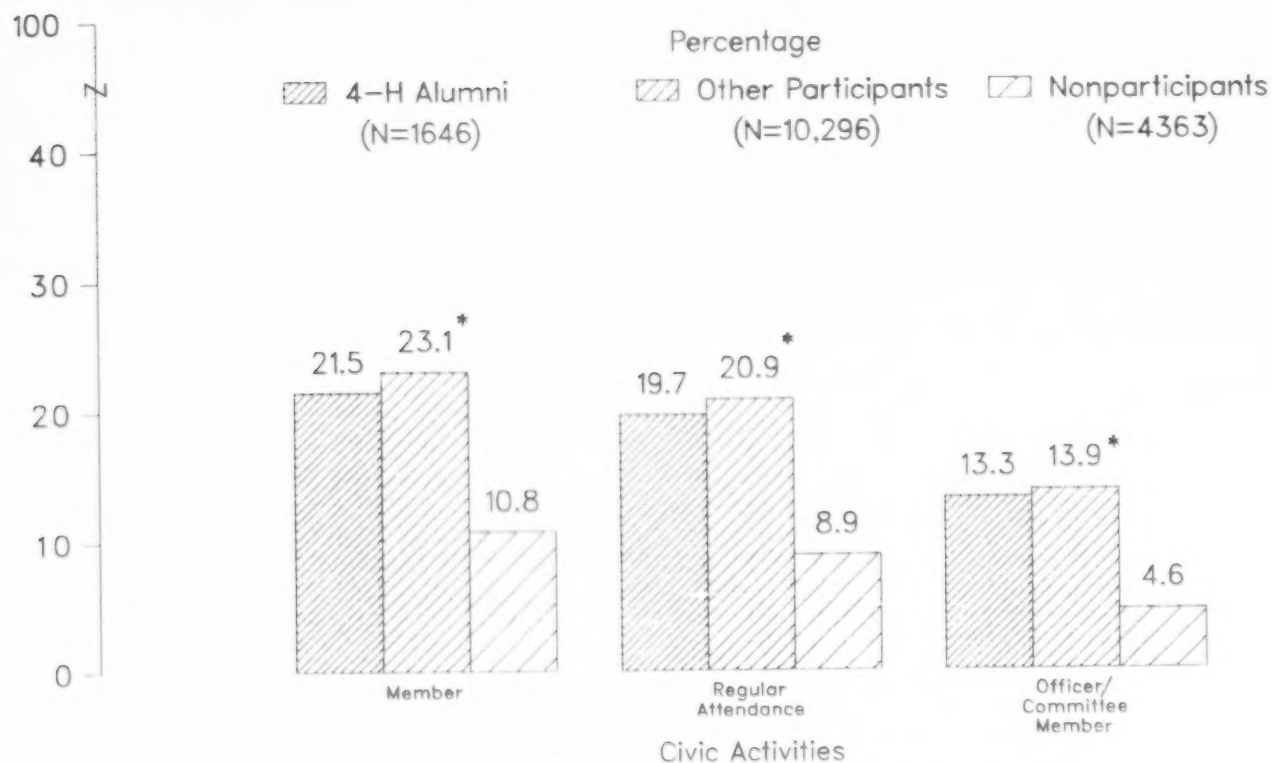
With the exception of church activities, large majorities of each group had no membership or involvement in these activities and organizations. In terms of percentages of membership, all groups of respondents were statistically significantly different, but were likely to join (in decreasing order) churches, community events, civic clubs, and political groups. Almost one in ten respondents in each study group was a member of an agricultural group, industrial group, or chamber of commerce. Generally, larger percentages of 4-H alumni had more memberships than other respondents. Nonparticipants reported significantly low levels of involvement, even in church membership. Only 38 percent were church members compared to 62 and 52 percent of the 4-H alumni and other participants, respectively.

Although membership levels were low, the percentages of respondents reporting regular attendance and officer/committee responsibilities indicate that large proportions of respondents who were members were highly involved in

these activities and organizations. For example, by dividing the percentages of 4-H alumni who regularly attend and who serve as officers in civic activities, respectively, by the percentage reporting membership, it is easily discerned that 92 percent of the membership attended regularly and 62 percent were officers. A comparison of this "relative involvement" in each activity indicates similar participation by all groups in civic and chamber of commerce. It also was found that 4-H alumni had greater attendance and officer/committee involvement relative to membership in community events and church, greater attendance-involvement in political groups, and greater officer/committee-involvement in industrial and agricultural activities. Other participants had participation patterns similar, but generally lower than those of 4-H alumni. Nonparticipants, in contrast, had greater officer/committee-involvement in political organizations and attendance-involvement and industrial foundations.

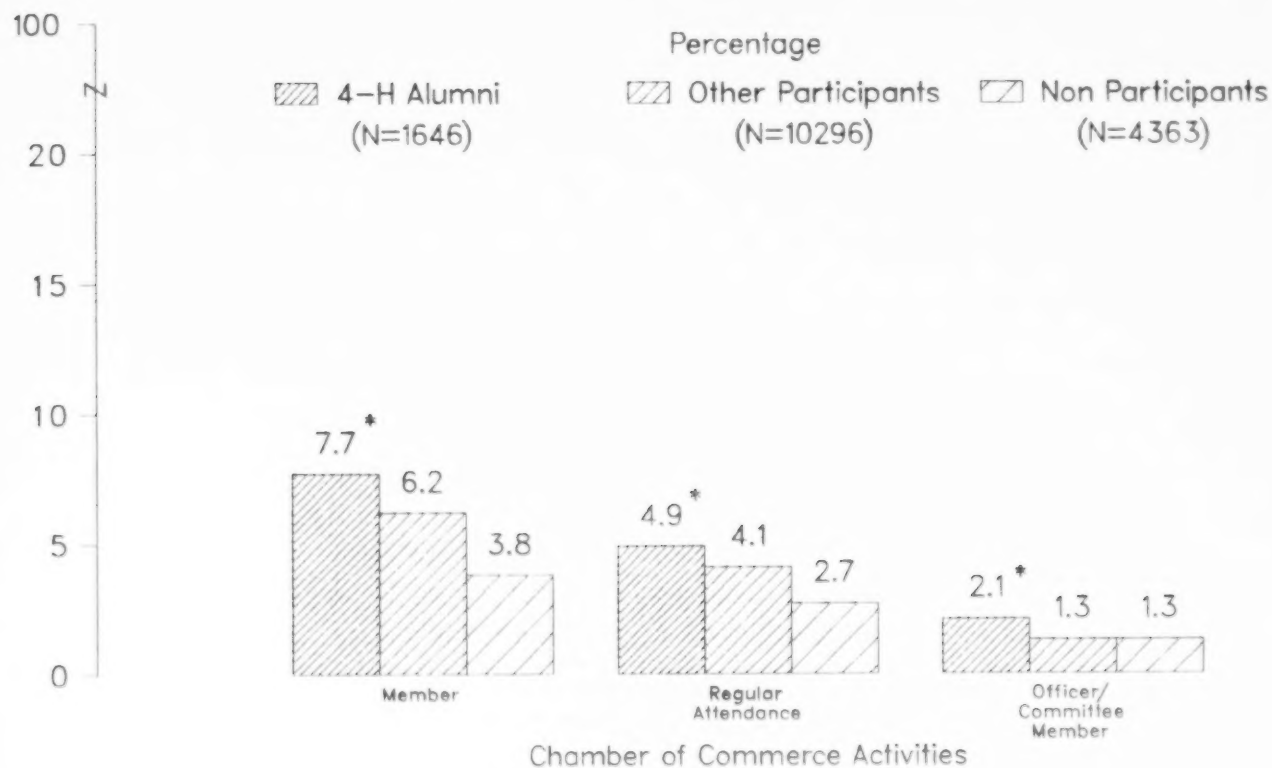
Scales were constructed that summarized the degree or intensity of involvement in each of these activities. Results are presented in Tables 13 to 19. The total reliability of each scale was determined by Cronbach's alpha and significant group differences were assessed by a one-way analysis of variance and Duncan's multiple range test for comparisons of group means. As expected from the examination above, mean scale scores were low for all groups. Nevertheless, all the groups were significantly different from each other for all events, except civic events. 4-H alumni and other participants were not significantly different in their involvement in civic clubs. Overall, reliability scores ranged from .72 (church scale) to .81 (civic scale) indicating moderate levels of measurement success and further application of the scales are appropriate in subsequent analyses.

Figure 16: Distribution of Respondent Participation in Civic Activities by Youth Organizational Membership



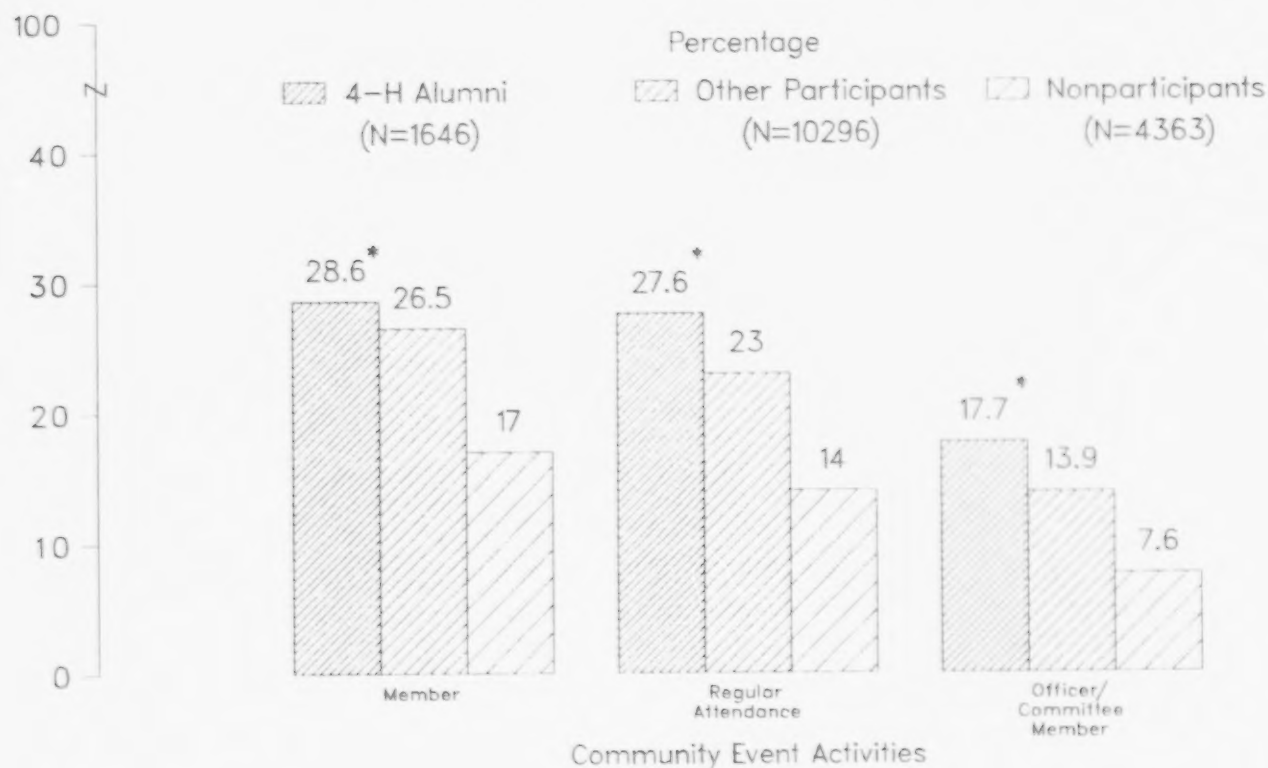
* Significant difference among all groups at $\alpha=0.05$.

Figure 17: Distribution of Respondent Participation in Chamber of Commerce Activities by Youth Organizational Membership



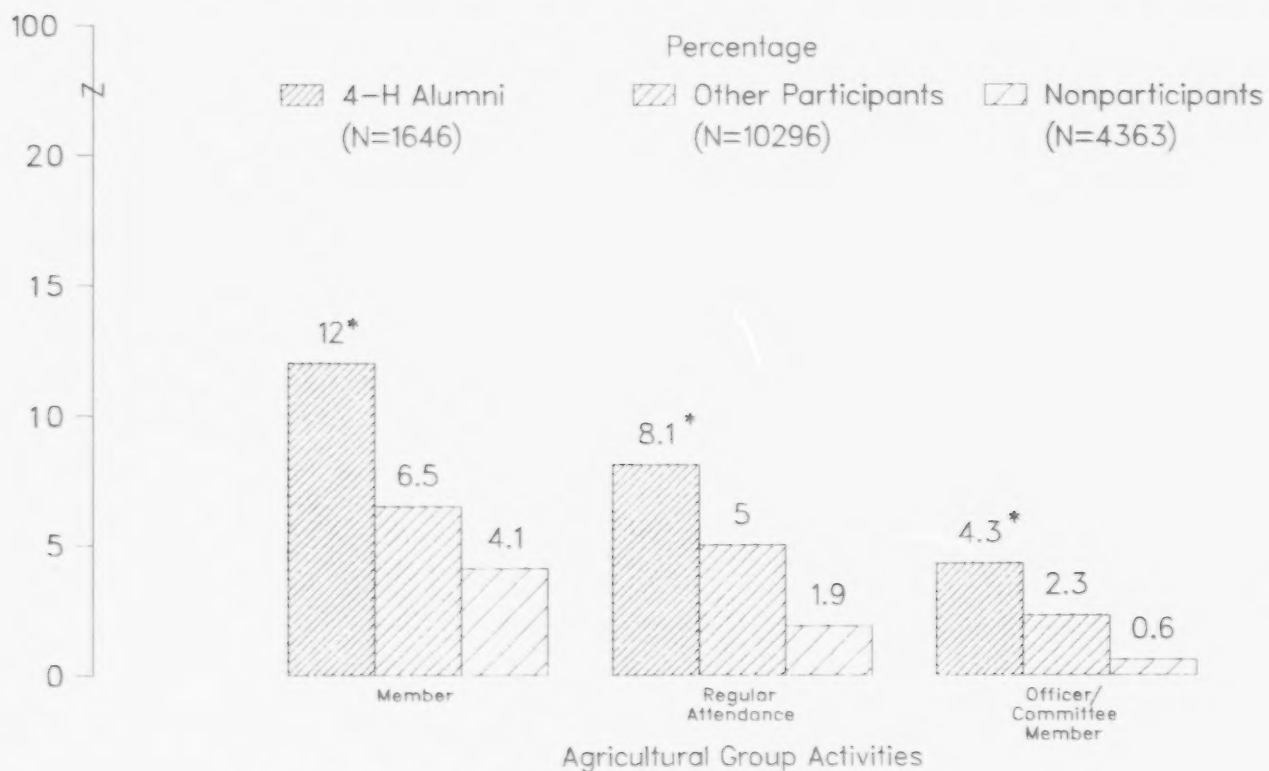
* Significant difference among all groups at $\alpha=0.05$.

Figure 18: Distribution of Respondent Participation in Committees Concerned With Community Affairs by Youth Organizational Membership



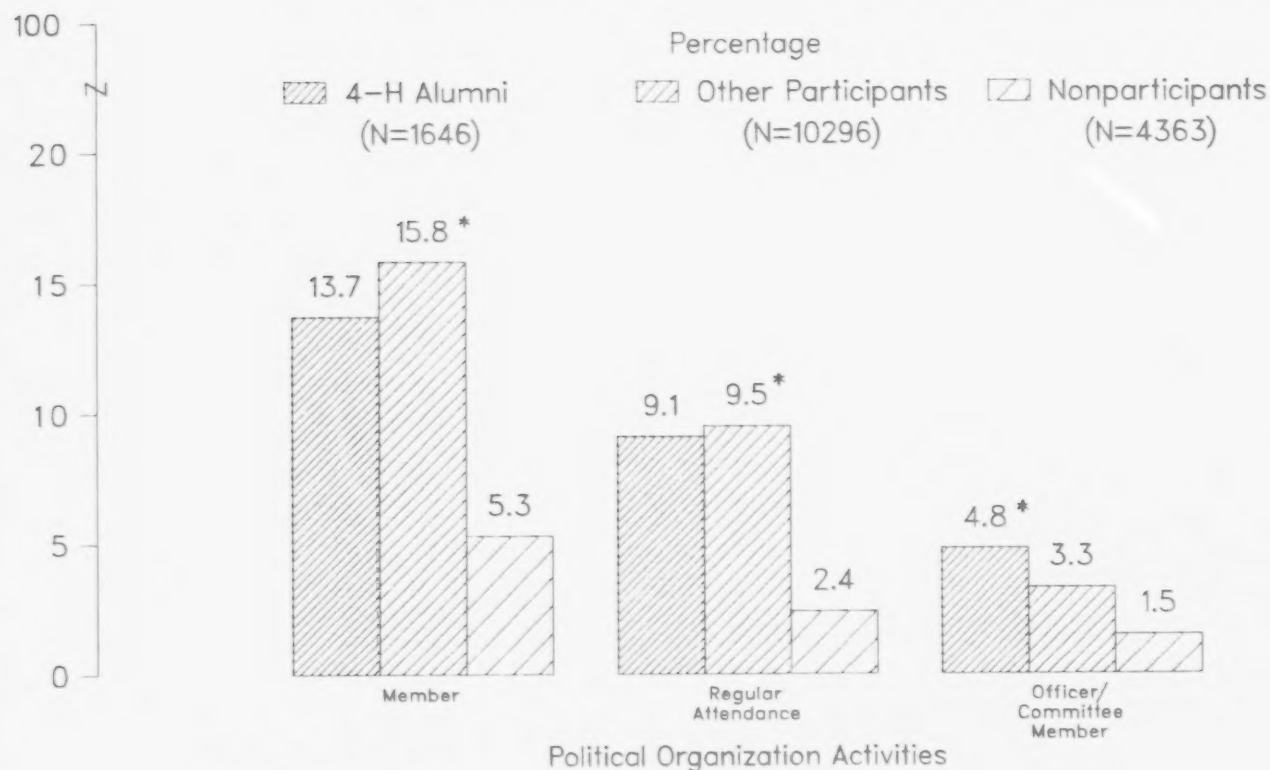
* Significant difference among all groups at $\alpha=0.05$.

Figure 19: Distribution of Respondent Participation in Agricultural Group Activities by Youth Organizational Membership



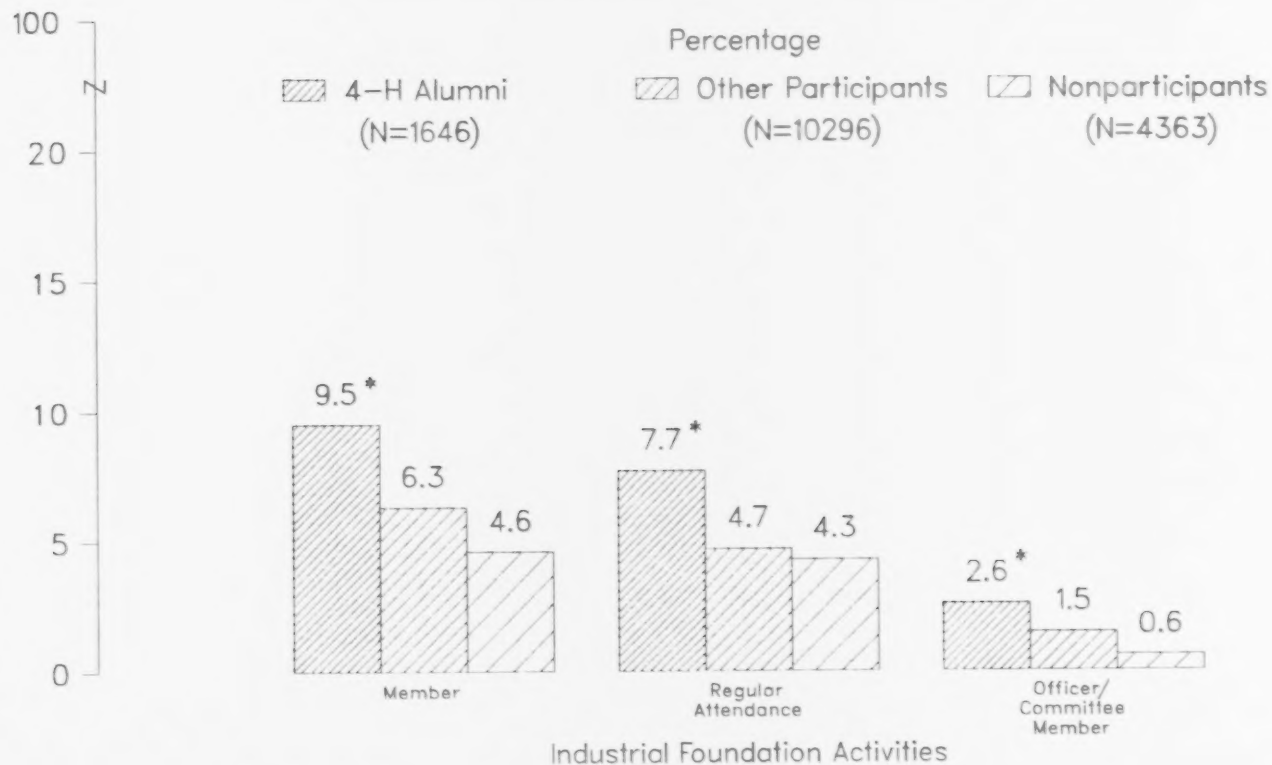
* Significant difference among all groups at $\alpha=0.05$.

Figure 20: Distribution of Respondent Participation in Political Organizations by Youth Organizational Membership



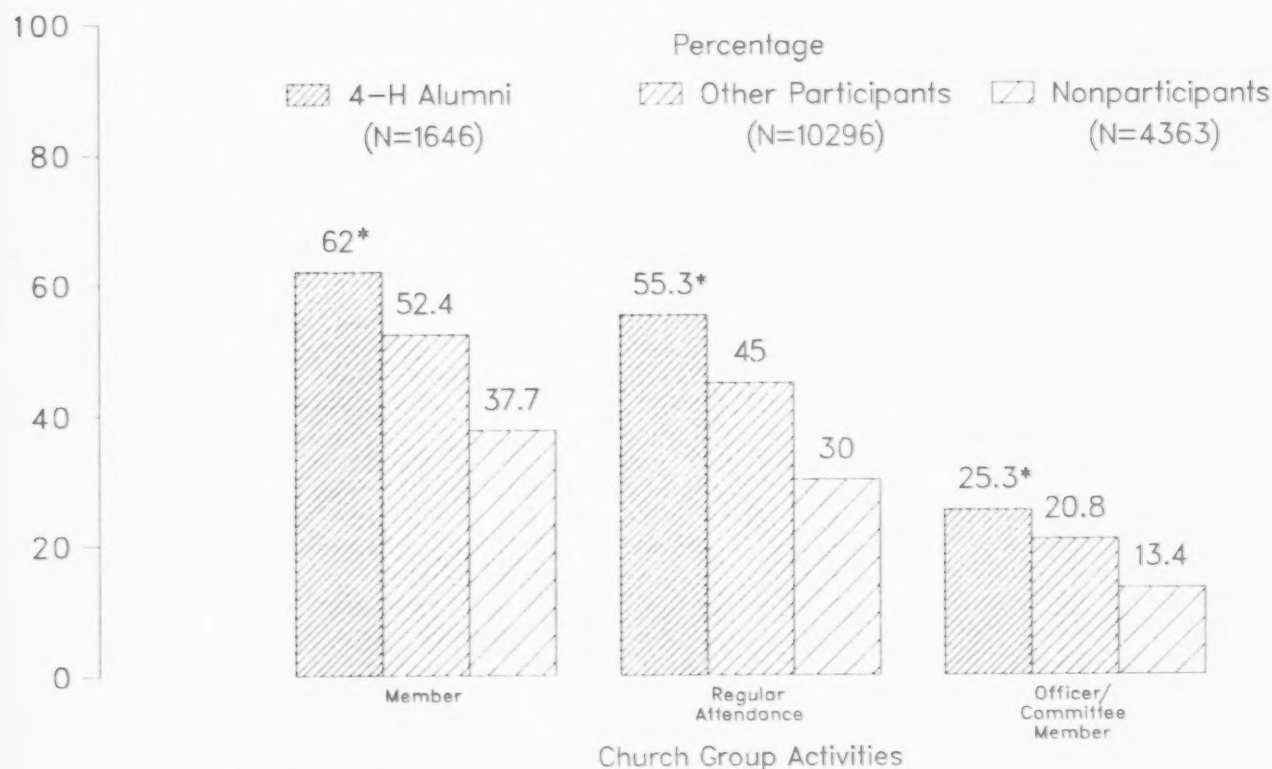
* Significant difference among all groups at $\alpha=0.05$.

Figure 21: Distribution of Respondent Participation in Industrial Foundation Activities by Youth Organizational Membership



* Significant difference among all groups at $\alpha=0.05$.

Figure 22: Distribution of Respondent Participation in Church Group Activities by Youth Organizational Membership



* Significant difference among all groups at $\alpha=0.05$.

Table 13: A Summated Scale of Respondent Participation in Civic and Luncheon Clubs.

Civic Scale Score (%)	4-H Alumni	Other Participants	Non-Participants	Total
Zero	78.5	76.9	89.2	30.3
One	1.6	2.1	1.9	2.0
Three	6.6	7.2	4.3	6.4
Five	0.2	0.1	--	0.1
Seven	13.1	13.8	4.6	11.2
Sample size	1646	10296	4363	16305
Mean	1.1	1.2	0.5	1.0
Standard Deviation	2.4	2.4	1.6	2.3
Reliability Alpha				.81
F=167.8 p < .0001	--	--	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Table 14: A Summated Scale of Respondent Participation in the Chamber of Commerce.

Chamber of Commerce Scale Score (%)	4-H Alumni	Other Participants	Non-Participants	Total
Zero	92.3	93.8	96.2	94.3
One	2.7	1.9	1.1	1.8
Three	2.9	3.0	1.4	2.6
Five	0.1	0.1	--	0.1
Seven	1.9	1.1	1.3	1.3
Sample size	1646	10296	4363	16305
Mean	0.3	0.2	0.1	0.2
Standard Deviation	1.1	0.9	0.9	0.9
Reliability Alpha				.77
F=9.8 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Table 15: A Summated Scale of Respondent Participation on a Committee Concerned with Community Affairs.

Community Event Scale Score (%)	4-H Alumni	Other Participants	Non- Participants	Total
Zero	71.4	73.5	83.0	75.8
One	0.5	3.0	2.8	2.7
Three	10.3	9.6	6.7	8.9
Five	0.5	0.5	0.3	0.4
Seven	17.3	13.5	7.3	12.2
Sample size	1646	10296	4363	16305
Mean	1.5	1.3	0.8	1.2
Standard Deviation	2.7	2.4	1.9	2.4
Reliability Alpha				.79
F=103.1 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Table 16: A Summated Scale of Respondent Participation in an Agricultural Group.

Agricultural Group Scale Score (%)	4-H Alumni	Other Participants	Non- Participants	Total
Zero	88.0	93.5	95.9	93.6
One	3.7	1.5	2.2	1.9
Three	4.1	2.7	1.3	2.5
Five	0.2	--	--	--
Seven	4.1	2.3	0.6	2.0
Sample size	1646	10296	4363	16305
Mean	0.4	0.3	0.1	0.2
Standard Deviation	1.5	1.2	0.6	1.1
Reliability Alpha				.79
F=69.1 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Table 17: A Summated Scale of Respondent Participation in a Political Organization.

Political Group Scale Score (%)	4-H Alumni	Other Participants	Non- Participants	Total
Zero	86.3	84.2	94.7	87.3
One	4.7	5.9	2.8	4.9
Three	4.3	6.6	0.9	4.9
Five	--	0.4	--	0.2
Seven	4.8	2.9	1.5	2.7
Sample size	1646	10296	4363	16305
Mean	0.5	0.5	0.2	0.4
Standard Deviation	1.6	1.4	0.9	1.3
Reliability alpha				.76
F=98.1 p< .0001	--	--	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Table 18: A Summated Scale of Respondent Participation in an Industrial Foundation.

Industrial Group Scale Score (%)	4-H Alumni	Other Participants	Non- Participants	Total
Zero	90.5	93.7	95.4	93.8
One	1.8	1.5	0.3	1.2
Three	5.0	3.2	3.7	3.5
Five	--	--	--	--
Seven	2.6	1.5	0.6	1.4
Sample size	1646	10296	4363	16305
Mean	0.4	0.2	0.1	0.2
Standard Deviation	1.3	1.0	0.8	1.0
Reliability Alpha				.78
F=23.6 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Table 19: A Summated Scale of Respondent Participation in a Church Group.

Church Scale Score (%)	4-H Alumni	Other Participants	Non- Participants	Total
Zero	38.6	47.6	62.3	50.6
one	6.3	7.1	7.6	7.2
Three	30.3	24.5	16.6	23.0
Five	0.4	0.3	--	0.2
Seven	25.0	20.5	13.4	19.1
Sample size	1646	10296	4363	16305
Mean	2.7	2.3	1.5	2.1
Standard Deviation	2.8	2.7	2.4	2.7
Reliability Alpha				.72
F=173.9 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Because involvement in community activities is one of the variables in the Youth-Adult Organizational Participation Model, a summated score reflecting the total number of activities in which respondents participated was computed by summing each respondent's seven scale scores. The resulting Community Activities Score had values ranging from 0 to 42. The higher the score the more organizations in which a respondent participated and the greater the level of involvement. Table 20 presents the composite scores. Each group was significantly different from the others. Moreover, the low reliability coefficient of .58 had two important implications. First, it suggests that the individual scales comprising the Community Activities Score are unrelated. In other words, respondents were not members of multiple organizations. Secondly, the use of such composite scores in further analyses would be inappropriate. Consequently, each of the seven activity scales will be included in the analysis of the Youth-Adult Organizational Participation Model.

Table 20: Composite Measure of Respondents' Adult Participation in Community Activities.

Community Activities Score (%)	4-H Alumni	Other Participants	Non-Participants	Total
0-10	77.7	81.7	91.5	83.9
11-20	13.1	12.3	6.3	10.8
21-30	8.5	5.4	1.6	4.7
31-42	0.7	0.6	0.6	0.6
Sample size	1646	10296	4363	16305
Mean	7.0	5.9	3.3	5.3
Standard deviation	7.2	6.9	5.3	6.7
Reliability alpha				.58
F=300.1 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

Extension Participation

Participation in the programs conducted by the Extension Service was examined for each of the three groups. Respondents were asked initially if they had served as a leader in the 4-H Youth Program. Table 21 reports the types of leadership positions held. 4-H alumni were much more likely to have served in leadership roles, with almost 16 percent having responded so, compared to 2 percent of the other participants and the nonparticipants. The groups' participation was significantly different for each type of leadership position. Non4-H respondents (other participants and nonparticipants) indicated they were mainly organizational and project leaders. In contrast, almost one out of every three 4-H alumni held organizational, junior/teen, and activity leader positions, while 48 percent were project leaders.

Table 21: Participation as a Leader in the 4-H Youth Program.

Types of 4-H Leader(%)	4-H Alumni	Other Participants	Non- Participants	Chi Square
Organizational	30.6	55.5	51.6	28.7 ^a
Project	47.8	56.1	35.8	9.8 ^b
Activity	28.6	26.5	--	34.4 ^a
Junior/teen	33.3	9.7	14.7	34.9 ^a
Other	14.1	7.7	12.6	3.8
Sample Size	255	155	95	

^a Significant at $p < .0001$

^b Significant at $p < .008$

Since the Extension Service conducts a wide variety of programs and services in addition to the 4-H Youth Program, respondents were also asked about their and their family's current involvement in Extension programs. As shown in Table 22, the programs and services most often used by all groups were Extension prepared articles, radio programs, and newsletters. Less than a third of the respondents in each group attended educational programs and consulted Extension home economists, respectively. Although this general pattern prevailed, significant differences in frequency of use were observed among the three study groups for each program and service. Given each program and service, 4-H alumni were more frequent users than other respondents.

To represent the scope and frequency of utilization, responses to each program and service were summed. "Never used" was given a value of one; "once or twice a year," a value of two; "three to five times a year," a value of three; "every other month or 6 to 8 times a year," a value of four; and "at least once a month," a value of 5. Composite scores ranged from 4 to 30, with

Table 22: Current Frequency of Involvement with Extension Programs and Services.

Service and Frequency of Interaction (%)	4-H Alumni	Other Participants	Non- Participants	Total
Attend education programs				
Never	70.7	82.0	88.7	82.7
Once or twice a year	17.0	11.1	6.8	10.6
3-5 times a year	6.6	3.9	2.4	3.7
Every other month	3.1	1.3	0.3	1.2
At least once a month	2.6	1.7	1.8	1.8
Sample size	1640	10244	4325	16209
F=97.53 p < .0001	**	**	**	
Consultation about agricultural/gardening problems				
Never	56.2	71.4	86.8	74.0
Once or twice a year	31.2	19.9	10.8	18.6
3-5 times a year	8.8	5.8	0.3	4.7
Every other month	1.5	1.2	0.9	1.1
At least once a month	2.3	1.7	1.2	1.6
Sample size	1639	10244	4325	16208
F=236.2 p < .0001	**	**	**	
Consultation with Extension Home Economist				
Never	76.7	85.8	93.2	86.9
Once or twice a year	16.4	9.4	4.3	8.7
3-5 times a year	3.5	2.9	0.6	2.4
Every other month	0.6	0.5	0.3	0.5
At least once a month	2.8	1.4	1.6	1.6
Sample size	1634	10244	4325	16203
F=80.9 p < .0001	--	--	--	
Listen to Extension radio programs				
Never	54.3	69.8	72.6	69.0
Once or twice a year	5.4	6.4	7.6	6.6
3-5 times a year	8.5	6.0	3.7	5.6
Every other month	4.1	4.3	1.8	3.6
At least once a month	27.6	13.6	14.3	15.2
Sample size	1634	10244	4325	16203
F=132.9 p < .0001	**	**	**	

Table 22: (Cont.)

Service and Frequency of Interaction (%)	4-H Alumni	Other Participants	Non- Participants	Total
Read Extension articles				
Never	32.9	48.8	62.5	50.9
Once or twice a year	4.7	9.4	7.8	8.5
3-5 times a year	8.1	8.8	6.4	8.1
Every other month	9.0	6.4	4.2	6.1
At least once a month	45.3	26.6	19.0	26.5
Sample size	1632	10231	4325	16188
F=302.3 p < .0001	**	**	**	
Receive Extension newsletters				
Never	69.8	80.6	82.8	80.1
Once or twice a year	2.1	2.1	2.8	2.3
3-5 times a year	2.5	3.3	1.1	2.6
Every other month	3.6	2.4	3.1	2.7
At least once a month	22.0	11.7	10.3	12.4
Sample size	1632	10244	4325	16201
F=83.4 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

a scale reliability of .69. All groups were significantly different from each other. 4-H alumni had a mean score of 12, compared to 10 by other participants, and 9 by nonparticipants.

In summary, participation of respondents as adults in community events and in the programs and services of the Extension Service was limited. Large majorities of each group were not members of community organizations nor users of the examined Extension programs. When respondents were members of community organizations, they were often highly involved by regular attendance and committee membership. Comparisons of 4-H alumni with non4-H respondents

Table 23: Composite Measure of Involvement with Extension Programs and Services.

Extension Involvement Score	4-H Alumni	Other Participants	Non-Participants	Total
4.0 to 8.0	30.4	48.4	63.0	50.5
8.1 to 12.0	24.9	27.1	16.8	24.1
12.1 to 16.0	22.5	14.5	14.9	15.4
16.1 to 20.0	15.7	7.8	4.0	7.6
20.1 to 24.0	5.4	1.6	1.0	1.8
24.1 to 30.0	1.1	0.6	0.3	0.6
Sample size	1640	10244	4325	16209
Mean	12.2	9.9	8.9	9.9
Standard deviation	5.2	4.4	4.0	4.5
Reliability alpha				.69
F=335.9 p < .0001	**	**	**	

** Indicates group is significantly different from other groups as determined by Duncan's Multiple Range Test.

produced more often significant differences than not. These alumni tended to be more involved in community activities and 4-H leadership positions than other groups, particularly former nonparticipants of youth programs. Moreover, 4-H alumni and their families more often used the programs and services of the Extension Service.

Impact of Youth Programs

As reported earlier, the overall objective of this study is to determine the impact of participation in youth programs on the development of individual's life skills and their subsequent involvement in community activities. The previous section described participation in and value of youth organizational experiences. This section attempts to measure the impact of that participation

on community involvement. A causal model depicting the sources of influence on community involvement was presented in Figure 2 (Figure 3 for nonparticipants). Although Figure 2 appears to be somewhat complex, it can be divided into four outcomes: effects on length of organizational membership, life skills, educational accomplishments and community involvement. Each effect is assumed to depend both on all previous outcomes in the model and on exogenous variables. Therefore, a regression model must be formulated for each effect on each of the three groups in order to determine the impact of participation in organizations as a youth on involvement in the community as an adult. For nonparticipants, Figure 3 proposes two outcomes: effects on educational accomplishments and community involvement.

Also, the paths between variables in each model are examined in two ways. First, standardized regression coefficients are computed to enable the determination of the contribution of variables within each group. These coefficients should identify the youth organizational experiences that make the largest contributions to the development of life skills and community involvement for those who participated in 4-H and in other groups and those who did not participate in organizations as youth. The second analysis involves the computation of unstandardized regression coefficients to enable the comparison of the contribution of variables between groups. In other words, the unstandardized coefficients for 4-H alumni will be compared to the unstandardized coefficients of other participants. This difference provides one answer to the question, "What difference does it make that individuals participated in 4-H?"

The variables selected to test the models were first analyzed by calculating their product-moment correlations. The correlation matrix for each model, presented in Tables 24 through 26, reveals no extremely large correlation coefficients between independent variables hypothesized to impact on dependent

Table 24: Correlation Matrix of Independent Variables Hypothesized to Impact on 4-H Youth-Adult Organizational Participation Model.

1. Sex	1																		
2. Residence	ns	2																	
3. Region	ns	.07	3																
4. Entry Age	-.09	.09	ns	4															
5. Program Era	.13	.17	ns	.10	5														
6. Years of Participation	ns	-.23	.07	-.31	-.14	6													
7. Challenges	ns	-.08	.12	-.06	ns	.36	7												
8. Experience	.07	-.13	ns	ns	ns	.22	.49	8											
9. Attitudes	.14	-.10	.10	ns	-.10	.18	.27	.43	9										
10. Educational Attainment	-.08	.07	.08	ns	-.09	.13	.22	ns	-.05	10									
11. Grade Average	.23	ns	ns	ns	ns	.13	.21	ns	ns	.40	11								
12. Civic Score	.09	.05	.08	ns	.14	.08	.16	.10	ns	.24	.16	12							
13. Chamber	-.14	ns	ns	ns	ns	.13	.13	.06	ns	.12	.07	.26	13						
14. Community	ns	.05	ns	.06	ns	.06	.13	.08	ns	.22	.15	.42	.16	14					
15. Ag Group	-.07	-.19	ns	ns	-.05	.12	.07	ns	ns	.09	.08	.09	.08	.11	15				
16. Pol Group	ns	ns	ns	ns	.09	ns	.10	.12	.05	.10	.13	.22	.09	.24	.06	16			
17. Ind Group	-.13	ns	.09	ns	ns	ns	.07	.08	ns	.09	ns	.12	.17	.15	ns	ns	17		
18. Church	ns	ns	-.09	ns	.09	.17	.14	.13	.08	.10	.15	.18	ns	.26	ns	.15	.05	18	
19. Ext. Score	ns	-.18	-.10	ns	.12	.23	.18	.21	.25	.06	ns	.15	.12	.18	.28	.16	ns	.20	19

ns = nonsignificant at $\alpha = .05$

Table 25: Correlation Matrix of Independent Variables Hypothesized to Impact on Other Participants Youth-Adult Organizational Participation Model.

1. Sex	1																			
2. Residence	.06	2																		
3. Region	-.03	.06	3																	
4. Entry Age	ns	-.16	-.06	4																
5. Program Era	-.14	.03	-.02	.25	5															
6. Years of Participation	.18	.10	ns	-.47	-.10	6														
7. Challenges	.08	.04	ns	-.10	-.02	.29	7													
8. Experience	.10	ns	-.07	-.04	.05	.20	.56	8												
9. Attitudes	-.03	-.03	-.03	ns	ns	.14	.33	.47	9											
10. Educational Attainment	-.12	.23	.08	-.20	-.10	.19	.10	-.07	-.08	10										
11. Grade Average	.21	.11	ns	-.07	.02	.18	.12	.05	-.10	.30	11									
12. Civic Score	.10	.07	-.04	ns	.16	.11	.15	.11	.06	.16	.16	12								
13. Chamber	-.07	ns	-.02	ns	ns	.08	.09	.02	.05	.09	.07	.25	13							
14. Community	ns	.07	ns	ns	.12	.16	.16	.11	ns	.21	.11	.45	.23	14						
15. Ag Group	-.06	-.15	-.03	.05	-.05	.05	ns	-.03	ns	ns	.02	.15	.06	.12	15					
16. Pol Group	ns	.10	.04	-.06	.06	.12	.16	.12	ns	.14	.08	.20	.19	.20	ns	16				
17. Ind Group	-.05	ns	ns	-.04	.04	ns	.11	.10	.05	.03	ns	.14	.11	.15	.03	.15	17			
18. Church	.13	ns	-.10	.03	.18	.17	.14	.03	ns	.11	.18	.26	.13	.25	.04	.13	.10	18		
19. Ext. Score	.04	-.28	-.14	.04	.14	.08	.09	.09	.10	-.06	ns	.17	.15	.15	.36	.06	.13	.15	19	

ns = nonsignificant at $\alpha = .05$

Table 26: Correlation Matrix of Independent Variables Hypothesized To Impact on Nonparticipant Youth-Adult Organizational Participation Model.

1. Sex	1													
2. Residence	ns	2												
3. Region	.05	.20	3											
4. Educational Attainment	-.10	.27	.12	4										
5. Grade Average	.14	ns	-.06	.30	5									
6. Civic Score	.05	.17	.04	.05	-.07	6								
7. Chamber	-.12	-.04	-.06	.09	ns	ns	7							
8. Community	ns	.10	-.08	.18	ns	.28	.33	8						
9. Ag Group	-.10	-.13	ns	.04	.09	-.05	.22	.06	9					
10. Pol Group	-.08	ns	-.09	.13	ns	.04	-.03	.23	ns	10				
11. Ind Group	-.17	-.08	-.09	.13	ns	.09	.66	.29	.24	ns	11			
12. Church	ns	ns	-.12	.08	.11	.16	.22	.38	.03	.04	.23	12		
13. Ext. Score	ns	-.18	-.12	ns	ns	-.04	ns	.08	.09	.10	.16	.18	13	

ns = nonsignificant at $\alpha = .05$.

variables. Therefore, all variables were retained in each model. Because group sample sizes were large, some path coefficients were statistically significant but made a small theoretical or explanatory contribution to the analysis. These coefficients had values between zero and ± 1.00 and will be excluded from the discussion of impact.

Effects on Years of Participation

The first path to be examined in Figure 2 is the impact of background characteristics on length of organizational membership. Based on the

significant F value for each of the regression models presented in Table 27, it was concluded that the joint effects of all the independent variables on the dependent variable (years of participation) is significantly different from zero. In other words, observed multiple correlations of background variables, entry age, and program era on length of membership are not due to sampling fluctuations.

Table 27: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics on Length of Organizational Learning Experiences.

Independent Variables	Years of Participation	
	4-H Alumni	Other Participants
Sex	-.045 ^a	.148 ^a
Place of Residence	-.195 ^a	.021 ^a
Region	.101 ^a	.022 ^a
Entry Age	-.293 ^a	-.469 ^a
Program Era	-.071 ^a	-.009
F Value (within group)	57.93 ^a	666.80 ^a
R ²	.15	.25

^aSignificant at $\alpha = .05$.

It was reported earlier that the average age which respondents joined youth organizations was 10.6 for 4-H alumni and 9.5 for other participants. Further, 4-H alumni stayed for 4 years while other participants held membership for 6 years. Factors affecting this variation in years of participation are

presented in Table 27. The primary variable affecting how long an individual remained in 4-H was entry age. Its coefficients of $-.293$ means that those who joined at an earlier age remained in 4-H longer. Entry age was followed by place of residence ($-.195$), and region ($.101$). In sum, those who stayed in 4-H the longest were most likely to have joined at an early age, resided in a rural area, and lived in the Northeast/West region of the Nation. For other participants, the most important variables were entry age ($-.469$) and sex ($.148$). Thus, those who joined at an early age and were female stayed in other organizations for the longest time period. Time of membership (program era) did not have a significant impact on either group. Collectively, the variables in the models explained 15 percent of the variation in the length of time individuals were members of 4-H and 25 percent of the variation in length of membership in other youth organizations.

Effects on Life Skills

The second step of the path model in Figure 2 measures the impact of background characteristics and length of organizational experiences on the development of life skills. As explained earlier, life skills were divided into challenges, personal development and attitudes toward the organizations to which respondents belonged. The findings of this step in the path analysis are contained in Table 28. All models of variables affecting life skills were found to be statistically significant.

Challenges. As reported in Table 28, opportunities for challenges and responsibilities was most affected by years of participation for both 4-H alumni ($.386$) and other participants ($.301$). This means that those who had longer tenure were more satisfied with opportunities for challenges and responsibilities. Collectively, the variables in the models accounted for 15 percent

Table 28: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics and Length of Organizational Experience on Life Skills.

Independent Variables	Life Skills					
	Challenges		Development		Attitudes	
	4-H Alumni	Other Participants	4-H Alumni	Other Participants	4-H Alumni	Other Participants
Sex	.048 ^a	.035 ^a	.102 ^a	.049 ^a	.130 ^a	-.064 ^a
Place of Residence	.006	.010	-.091 ^a	-.011	-.069 ^a	-.039 ^a
Region	.096 ^a	.006 ^a	-.008	-.074 ^a	.078	-.025
Entry Age into Youth Programs	.073 ^a	.053 ^a	.120 ^a	.054 ^a	.089 ^a	.082 ^a
Program Era	.013	-.011	.088 ^a	.063 ^a	.200 ^a	.029 ^a
Years of Participation	.386 ^a	.301 ^a	.245 ^a	.223 ^a	.130 ^a	.204 ^a
F Value (within group)	46.57 ^a	151.41 ^a	23.51 ^a	95.39 ^a	23.26 ^a	58.33 ^a
R ²	.15	.08	.08	.05	.08	.03

^aSignificant at $\alpha = .05$.

of the variation in 4-H alumni ratings of opportunities for challenges and responsibilities and 8 percent for participants of other organizations.

Development. The second life skill to be examined was personal development. As reported earlier in Table 28, the factors most impacting on personal development of 4-H alumni was years of participation (.245), entry age (.120), and sex (.102). This means that personal development was rated higher by those

who had longer tenure in 4-H, joined at an earlier age, and were female. Collectively, the variables in the model accounted for 8 percent of the variation in ratings of personal development.

For other participants, personal development was affected primarily by years of participation (.223). Collectively, the variables in the model accounted for 5 percent of the variation in ratings of personal development for participation in other organizations.

Attitudes. The third life skill to be examined was attitudes toward the organization. Table 28 indicates program era (.200), years of participation (.130) and sex of the respondent (.130) had the largest impacts. Those who participated in the 1960's and earlier, had longer membership in 4-H, and were female had the most positive attitude toward 4-H. Together, the variables explained 8 percent of the variation in 4-H alumni attitudes toward 4-H.

For other participants, those who had longer membership (.204) had the most positive attitudes toward the organizations in which they participated as youth. Collectively, the variables in the model explained 3 percent of the variation in attitudes toward the organizations in which other participants were members.

Summary. Of the factors impacting on life skills, the most dominant variable for both groups was years of participation, followed by gender and entry age. Generally, those who were participants for a longer period of time, were female, and joined at an early age and were more satisfied with the quality of experiences encountered in the organizations in which they held membership.

Effects on Education

The third path in Figure 2 measures the impact of background characteristics, length of organizational experiences and life skills on educational

accomplishments of 4-H alumni and other program participants. The modified model for nonparticipants is shown in Figure 3. The impacts of these models' respective variables on education are presented in Table 29. All models were statistically significant.

Attainment. It was reported in Table 5 that considerable variation exists in the level of formal education attained by respondents. For 4-H alumni, the variable having the most impact on educational attainment was challenges (.261) followed by personal development (-.137). Alumni who had a higher level of formal education were more satisfied with opportunities provided by 4-H for challenges and responsibility and were less satisfied with 4-H contributions to their personal development. Collectively, the variables in the model explained 10 percent of the variation in educational attainment.

For other participants, place of residence was the most important variable in explaining variation in educational attainment. Its coefficient (.206) was followed by sex (-.156) of the respondent, years of participation (.145), rating of opportunity for challenges (.127), and personal development (-.099). This means that other participants who attained more formal education were most likely to be from urban areas, male, participated longer in other organizations, were more satisfied with opportunities for challenges, and less satisfied with the organization's contribution to their personal development. The model explained 14 percent of the variation in educational attainment of other participants.

For nonparticipants, place of residence (.253) and sex (-.114) were important predictors of educational attainment. Respondents who were reared in urban settings and were male tended to attain more education than other nonparticipants. Overall, their model explained 9 percent of attainment variation.

Table 29: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Educational Accomplishments.

Independent Variables	Educational Accomplishments					
	Attainment			Achievements		
	4-H Alumni	Other Participants	Non-Participants	4-H Alumni	Other Participants	Non-Participants
Sex	-.040	-.156 ^a	-.114 ^a	.255 ^a	.153 ^a	.114 ^a
Place of Residence	.010 ^a	.206 ^a	.253 ^a	.011	.087 ^a	-.004
Region	-.043	.047 ^a	.078 ^a	-.010	.003 ^a	-.072 ^a
Entry Age	.061 ^a	-.088 ^a		.041	.015	
Program Era	-.065 ^a	-.036 ^a		-.031	.009	
Years of Participation	.092 ^a	.145 ^a		.107 ^a	.139 ^a	
Challenge	.261 ^a	.127 ^a		.250 ^a	.082 ^a	
Development	-.137 ^a	-.099 ^a		-.099 ^a	.030 ^a	
Attitudes	-.098 ^a	-.097 ^a		-.129 ^a	-.156 ^a	
F Value (within groups)	18.77 ^a	181.23 ^a	140.08 ^a	25.70 ^a	103.08 ^a	30.32 ^a
R ²	.10	.14	.09	.13	.09	.02

^a Significant at $\alpha = .05$.

Achievements. Table 29 indicates that the variables having the most impact on high school academic achievements of 4-H alumni were sex (.255), challenges (.250), years of participation (.107), and attitudes (-.129). This means that those 4-H alumni who had higher grades were more satisfied with opportunities for challenges and responsibility, were female, participated in 4-H longer, and were less satisfied with directions and activities of 4-H. Collectively, the variables in the model explained 13 percent of the variation in grades earned in high school by 4-H alumni.

For other participants, grades earned in school were highest for those who were less satisfied with the directions and activities of their youth organizations (-.156), were female (.153), and had more years of participation in the youth organizations (.139). The model explained 9 percent of the variation in grades earned.

The model was not successful in explaining nonrespondents' educational achievements ($R^2 = 2\%$). Sex (.114) was the only background characteristic which had a prominent effect. It indicated that female respondents made better grades than males during high school.

Summary. In summary of factors affecting educational accomplishments, the most dominant variable on 4-H alumni was opportunities for challenges and responsibility. Those 4-H alumni who were more satisfied with such opportunities also earned more formal schooling and received better grades. For other participants, urban residents had more years of schooling while those who were less satisfied with activities or directions of their youth organizations made higher grades. Among nonparticipants, those who were male and with urban backgrounds attained more education while females reported having made better grades.

Finally, it should be noted that the direction of the impact of personal development and attitudes on educational accomplishments were not as hypothesized for both groups. Apparently, those who have higher educational accomplishments were not as satisfied with contributions of the practical experiences to their personal development and the activities provided by those organizations.

Effects on Adult Community Involvement

The final step of the path model measures the degree to which background characteristics and youth organizational and educational experiences affected respondents' community involvement. Since three different path models were used, findings are presented for 4-H alumni, other program participants, and nonparticipants. Also, because respondents were not members of multiple organizations (see Table 20), effects on eight different measures of community involvement are reported in Tables 30-37. The results varied widely with no more than 17 percent of the variation in participation being explained for a given group. Nevertheless, the models were statistically significant.

Civic Club Participation. Model results are reported in Table 30. Participation by 4-H alumni in civic clubs was most affected by level of education (.210) and program era (.174). Alumni who had more than a high school education and who had long since participated in 4-H were more likely to be highly involved in civic groups. Background and life skill variables had negligible contributions. Overall, the model explained 12 percent of this activity.

The model was less explanatory for other participants and nonparticipants. For the former group, level of education (.158) and program era (.155) affected level of involvement, while urban residence (.160) was important for nonparticipants. Collectively, 9 percent of this activity was explained for other participants and 3 percent for nonparticipants.

Table 30: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in Civic Clubs.

Independent Variables	Civic Club Participation		
	4-H Alumni	Other Participants	Non-Participants
Sex	.085 ^a	.072 ^a	.036
Place of Residence	.016	.025 ^a	.160 ^a
Region	.046	-.046 ^a	.013
Entry Age into Youth Programs	-.031	.054 ^a	
Program Era	.174 ^a	.155 ^a	
Years of Participation	.017	.047 ^a	
Challenges	.080 ^a	.061 ^a	
Development	.079 ^a	.022 ^a	
Attitudes	-.074 ^a	.047 ^a	
Level of Education	.210 ^a	.158 ^a	-.022
High School Grade Average	.039	.077 ^a	-.064 ^a
F Value (within group)	18.60 ^a	87.98 ^a	23.66 ^a
R ²	.12	.09	.03

^a Significant at $\alpha = .05$.

Chamber of Commerce. As shown in Table 31, the models provided little explanation of respondents' involvement in chambers of commerce. This was expected since one in ten of all respondents were active members of a chamber of commerce. Sex was the most relevant factor for participation by each group. Males were more likely than females to be active. The amounts of explained variation were less than 6 percent.

Table 31: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in a Chamber of Commerce.

Independent Variables	Chamber of Commerce Participation		
	4-H Alumni	Other Participants	Non-Participants
Sex	-.152 ^a	-.097 ^a	-.135 ^a
Place of Residence	-.021	-.027 ^a	-.067 ^a
Region	-.025	-.039 ^a	-.052 ^a
Entry Age into Youth Programs	-.005	.041 ^a	
Program Era	.065 ^a	.023 ^a	
Years of Participation	.092 ^a	.084 ^a	
Challenges	.070 ^a	.076 ^a	
Development	.037	-.052 ^a	
Attitudes	-.031	.038 ^a	
Level of Education	.062 ^a	.042 ^a	.040 ^a
High School Grade Average	.054	.059 ^a	.020
F Value (within group)	8.49 ^a	26.36 ^a	22.58 ^a
R ²	.06	.03	.03

^a Significant at $\alpha = .05$.

Community Events. Results presented in Table 32 varied for participation in community events. Overall, the 4-H model explained 7 percent of the variation in participation. Level of education (.161) positively affected

participation. Among other participants, those with higher educational levels (.176), more years of participation in past youth programs (.158) and longer time since participation (.149) were more highly involved in community events. Their model explained 11 percent of this activity. The model explained only 4 percent of nonparticipants' involvement. In addition to level of education (.148), region of residence (-.123) was most important. It appears that nonparticipants with higher educational levels and residence in the southern and north central states were most involved in this group.

Agricultural Groups. Table 33 indicates that the models explained 6 percent or less of respondents' participation in agricultural groups. For 4-H alumni, place of residence (-.184) was the most important variable. Alumni reared in rural areas were more involved than other alumni in this type of activity. Among other participants, respondents' having rural origins (-.169) and more years of participation in youth organizations (.113) were the most involved. Among nonparticipants, respondents who had rural origins (-.158), were female (-.144), and higher high school grades (.122) were more active in agricultural groups.

Political Groups. As previously noted, participation by all groups in political groups was infrequent. As Table 34 reports, the 4-H model explained 4 percent of variation in involvement. Alumni who had perceived greater contributions by youth programs to their personal development (.112), had higher school grades (.112), and had more years since participation (.103) were more involved in political groups. Other participants who had positive perceptions of contributions to their personal development (.120), had high levels of education (.104), and were less satisfied with the activities and directions taken by the youth organizations in which they belonged (-.109) were most likely to be politically active. The model for other participants explained 7 percent of their activity. For nonparticipants, the model explained

Table 32: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in Community Events.

Independent Variables	Community Events Participation		
	4-H Alumni	Other Participants	Non-Participants
Sex	-.029	-.058 ^a	-.020
Place of Residence	.047	.008	.064 ^a
Region	-.019	-.020 ^a	-.123 ^a
Entry Age into Youth Programs	.066 ^a	.088 ^a	
Program Era	.085 ^a	.149 ^a	
Years of Participation	.044	.158 ^a	
Challenges	.054	.089 ^a	
Development	.058	.058 ^a	
Attitudes	-.065 ^a	-.049 ^a	
Level of Education	.161 ^a	.175 ^a	.148 ^a
High School Grade Average	.074 ^a	.031 ^a	-.059 ^a
F Value (within group)	10.81 ^a	101.71 ^a	28.40 ^a
R ²	.07	.11	.04

^a Significant at $\alpha = .05$.

Table 33: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in an Agricultural Group.

Independent Variables	Agricultural Group Participation		
	4-H Alumni	Other Participants	Non-Participants
Sex	-.073 ^a	-.072 ^a	-.144 ^a
Place of Residence	-.184 ^a	-.169 ^a	-.158 ^a
Region	.008	.011	.027
Entry Age into Youth Programs	.064 ^a	.115 ^a	
Program Era	.005	-.042 ^a	
Years of Participation	.074 ^a	.113 ^a	
Challenges	.006	.029	
Development	-.007	-.093 ^a	
Attitudes	.020	.034 ^a	
Level of Education	.050	.002	-.038 ^a
High School Grade Average	.072 ^a	.066 ^a	.124 ^a
F Value (within group)	9.19 ^a	51.26 ^a	40.36 ^a
R ²	.06	.06	.05

^a Significant at $\alpha = .05$.

3 percent, with the most dominant variable being region of current residence (-.111). Respondents who lived in the South/North Central regions were less likely to be members of political groups.

Table 34: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in a Political Group.

Independent Variables	Political Group Participation		
	4-H Alumni	Other Participants	Non-Participants
Sex	-.011	-.056 ^a	-.067 ^a
Place of Residence	.006	.074 ^a	-.027
Region	.011	.018	-.111 ^a
Entry Age into Youth Programs	-.025	.000	
Program Era	.013 ^a	.085 ^a	
Years of Participation	.001	.083 ^a	
Challenges	-.010	.090 ^a	
Development	.112 ^a	.120 ^a	
Attitudes	.002	-.109 ^a	
Level of Education	.058 ^a	.104 ^a	.102 ^a
High School Grade Average	.112 ^a	.014	-.007
F Value (within group)	6.09 ^a	69.87 ^a	21.92 ^a
R ²	.04	.07	.03

^a Significant at $\alpha = .05$.

Industrial Foundation Groups. Table 35 indicates that sex of 4-H respondents (-.128) was the major determinant of their participation in industrial groups. Males were more involved than females. The 4-H model explained 4 percent of the variation in levels of participation. Very little variation was explained also in the model ($R^2 = 2\%$) for other participants. The most significant variable was respondents' perceptions of the challenges (.098) afforded to them by past youth programs. The model for nonparticipants explained the most variation in adult political participation with an R^2 value of 6 percent. Male (-.152), residents of the southern/north central region (-.110), and highly educated respondents in this group were more often than others involved in these organizations.

Church. The models for church participation were among the most successful in terms of levels of explained variation (Table 36). Among 4-H alumni, the major variables affecting participation were years of participation in 4-H (.165), years since participation (.147), region of residence (-.142), and high school grade average (.116). Alumni who had stayed in 4-H the longest, had the greatest number of years since participation, lived in the southern/north central regions, and had higher levels of education were the most active church members. Overall, the 4-H model explained 9 percent of the participation activity.

Among other participants, the model explained 12 percent of their involvement. The most active members had the greatest number of years since participation (.189), had participated longer than others in youth programs (.154), positively perceived the past challenges of their participation in youth programs (.115), resided in southern/north central regions (-.107), yet perceived youth programs' having very little contribution to their personal development (-.099). As reported earlier, nonparticipants were the least likely of the study groups to be church members. Their model explained only

Table 35: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in an Industrial Foundation.

Independent Variables	Industrial Foundation Participation		
	4-H Alumni	Other Participants	Non-Participants
Sex	-.128 ^a	-.055 ^a	-.152 ^a
Place of Residence	-.008	-.010	-.080 ^a
Region	.072 ^a	-.005	-.110 ^a
Entry Age into Youth Programs	-.036	-.071 ^a	
Program Era	.013	.068 ^a	
Years of Participation	-.082 ^a	-.050 ^a	
Challenges	.040	.098 ^a	
Development	.092 ^a	.049 ^a	
Attitudes	.013	-.005	
Level of Education	.075 ^a	.019	.103 ^a
High School Grade Average	.008	.011	-.007
F Value (within group)	5.76 ^a	21.87 ^a	45.27 ^a
R ²	.04	.02	.06

^a Significant at $\alpha = .05$.

3 percent of church activity. The major variable affecting membership was region of residence (-.107) indicating those nonparticipants living in the south/north central region were more likely to belong to a church.

Table 36: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in a Church.

Independent Variables	Church Participation		
	4-H Alumni	Other Participants	Non-Participants
Sex	.028	.067 ^a	.047 ^a
Place of Residence	.004	-.036 ^a	.008
Region	-.142 ^a	-.107 ^a	-.107 ^a
Entry Age into Youth Programs	.060 ^a	.079 ^a	
Program Era	.147 ^a	.189 ^a	
Years of Participation	.165 ^a	.154 ^a	
Challenges	.023	.115 ^a	
Development	.046	-.099 ^a	
Attitudes	.008	-.005	
Level of Education	.043	.094 ^a	.084 ^a
High School Grade Average	.116 ^a	.094 ^a	.069 ^a
F Value (within group)	14.19 ^a	118.13 ^a	19.89 ^a
R ²	.09	.12	.03

^a Significant at $\alpha = .05$.

Extension Programs and Services. The final measures of adult involvement concerned utilization of Extension programs and services. As shown in Table 37, the results clearly demonstrate that past association with the 4-H youth program significantly affects adults' contact with the Extension Service.

Among 4-H alumni, the path model explained 18 percent of their contact. Those most likely to use the Extension Service participated the longest in 4-H (.193), had more years since participation (.178), resided in rural areas (-.148), lived in the south/north central regions (-.157), and had more positive attitudes toward youth organizations (.145) in which they belonged.

For other participants and nonparticipants, their involvement models explained 14 percent and 7 percent, respectively. Other participants who were frequent users of Extension programs and services tended to be from the south/north central states (-.280), to have more years since participation in youth programs (.161) and more years of past participation (.109). Among nonparticipants, region of residence (-.224) and level of education (.149) were the major variables affecting utilization. Respondents with higher levels of education and from the south/north central regions were the most frequent users.

To summarize, the findings on factors influencing involvement in community events and utilization of Extension services and programs demonstrated that the region of current residence (south/north central) had the most frequent effect on adult activities across all groups. This was followed by program era and level of education; older, highly educated respondents were more active than others. Among past participants in all youth programs (including 4-H) years of participation had an important influence on subsequent adult activity. The longer members participated, the more active they were later in life. Participation in youth programs, however, had its own intrinsic value for the life skills as measured in this study had no significant effect on adult community and Extension involvement.

Value of 4-H Experiences

The first component of the analysis of the effects of variables on the development of life skills and community involvement compared the standardized

Table 37: Tests of Significance and Standardized Regression Coefficients for Regression of Background Characteristics, Length of Organizational Experiences, and Life Skills on Adult Participation in Programs and Services of the Extension Service.

Independent Variables	Participation In Extension Programs and Services		
	4-H Alumni	Other Participants	Non-Participants
Sex	.034	.013	.024
Place of Residence	-.148 ^a	-.280 ^a	-.224 ^a
Region	-.157 ^a	-.135 ^a	-.077 ^a
Entry Age into Youth Programs	.088 ^a	.015	
Program Era	.178 ^a	.161 ^a	
Years of Participation	.193 ^a	.109 ^a	
Challenges	.056	.068 ^a	
Development	.048	-.020	
Attitudes	.145 ^a	.049 ^a	
Level of Education	.099 ^a	.029 ^a	.149 ^a
High School Grade Average	-.047	-.016	-.087 ^a
F Value (within group)	29.70 ^a	136.63 ^a	51.56 ^a
R ²	.18	.14	.07

^a Significant at $\alpha = .05$.

regression coefficients for variables within each group to determine those activities and experiences making the largest contribution to 4-H alumni, other participants, and nonparticipants.

This component of the analysis compares unstandardized regression coefficients for variables between groups. Such a comparison establishes significant differences, if any, between 4-H alumni and other participants on the effects of independent variables on years of participation, development of life skills, educational accomplishments and community involvement. The results of this comparison are reported in Table 38. Significant differences are based on the equations illustrated at the end of the table.

Years of Participation. Background characteristics were more effective in accounting for variation in years of participation in other organizations than in 4-H (25% versus 15%). As reported in Table 38, four statistically significant *t* values contribute to this difference in explained variation. Two of the variables have a reversed effect on length of participation. In essence, explanation of variation in length of participation of 4-H youth was more dependent upon residence as youth (rural) and region of residence (northeast/west) while length of participation in other organizations was more dependent upon sex (female) and entry age (younger).

Life Skills. Few statistical differences existed in factors affecting the three life skill variables. Years of participation was the most influential variable in both challenges and personal development while sex of the respondent was most important in explaining variations in attitudes. In sum, variation in challenges and personal development of 4-H alumni was more dependent upon length of participation. Sex has a reversed effect on attitudes in that female 4-H alumni were more satisfied with the activities and directions of 4-H, males were more satisfied with activities and directions of other organizations.

Table 38: Tests of Significance between Unstandardized Regression Coefficients for 4-H Alumni and Other Participants.

Path Variable	4-H Alumni		Other Participants		t Value
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error	
Years of Participation					
Sex	-.223	.115	.953	.056	-9.155 ^c
Residence	-.262	.032	.042	.018	-8.385 ^c
Region	.231	.053	.065	.025	5.044 ^c
Entry Age	-.390	.031	-.578	.011	5.699 ^c
Program Era	-.013	.004	-.002	.002	-2.302 ^a
Challenge					
Sex	.086	.042	.062	.018	.525
Residence	-.003	.012	.006	.005	-.639
Region	.079	.019	.005	.008	3.522 ^c
Entry Age	.035	.012	.018	.004	1.335
Program Era	.001	.002	-.001	.001	.892
Yrs of Participation	.139	.009	.084	.003	5.727 ^c
Develop					
Sex	.194	.047	.094	.019	1.960 ^a
Residence	-.047	.013	-.007	.006	-2.842 ^b
Region	-.007	.021	-.048	.008	2.351 ^a
Entry Age	.061	.013	.020	.004	3.033 ^b
Program Era	.005	.002	.004	.001	.642
Yrs of Participation	.095	.010	.067	.003	2.625 ^b
Attitude					
Sex	.214	.040	-.097	.015	7.229 ^c
Residence	-.031	.011	-.018	.005	-1.021
Region	.060	.019	-.017	.007	3.894 ^c
Entry Age	.039	.011	.025	.003	1.243
Program Era	.008	.001	.002	.001	3.961 ^c
Yrs of Participation	.067	.009	.048	.003	2.019 ^a
Level of Education					
Sex	-.122	.076	-.475	.030	4.322 ^c
Residence	.081	.021	.198	.009	-5.069 ^c
Region	.061	.035	.064	.013	-.071
Entry Age	.050	.022	-.053	.007	4.633 ^c
Program Era	-.007	.003	-.004	.001	-1.192
Yrs of Participation	.057	.017	.068	.005	-.636
Challenge	.455	.051	.218	.020	4.394 ^c
Develop	-.228	.050	-.157	.019	-1.350
Attitude	-.184	.052	-.196	.022	.201

Table 38: (Cont.)

Path Variable	4-H Alumni		Other Participants		t Value
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error	
High School Average					
Sex	.712	.068	.446	.029	3.561 ^c
Residence	.008	.019	.081	.009	-3.433 ^c
Region	-.013	.032	.004	.013	-.510
Entry Age	.031	.019	.008	.007	1.086
Program Era	-.003	.002	.001	.001	-1.490
Yrs of Participation	.060	.016	.063	.005	-.157
Challenge	.395	.045	.136	.020	5.258 ^c
Develop	-.150	.043	.046	.019	-4.113 ^c
Attitude	-.222	.046	-.304	.022	1.622
Civic Groups					
Sex	.412	.125	.350	.051	.459
Residence	.020	.034	.039	.016	-.492 ^a
Region	.103	.055	-.100	.022	3.412 ^a
Entry Age	-.040	.034	.052	.011	2.606 ^b
Program Era	.031	.004	.026	.002	.974
Yrs of Participation	.017	.028	.035	.009	-.631
Challenge	.219	.082	.168	.034	.575
Develop	.207	.077	.057	.033	1.800
Attitude	-.222	.082	.152	.037	-4.176 ^c
Education	.337	.045	.258	.018	1.634
H.S. Grades	.068	.049	.128	.018	-1.159
Chamber of Commerce					
Sex	-.346	.061	-.182	.020	-2.561 ^a
Residence	-.013	.016	-.016	.006	.175
Region	-.026	.027	-.032	.009	.233
Entry Age	-.003	.016	.015	.004	-1.073
Program Era	.005	.002	.001	.001	1.722
Yrs of Participation	.042	.013	.024	.004	1.284
Challenge	.090	.040	.081	.013	.209
Develop	.046	.037	-.051	.013	2.444 ^a
Attitude	-.043	.040	.047	.015	-2.137 ^b
Education	.047	.022	.026	.007	.897
H.S. Grades	.044	.024	.038	.007	.236
Community Events					
Sex	-.158	.143	-.283	.051	.827
Residence	.069	.038	.012	.016	1.373
Region	-.047	.063	-.045	.022	-.034
Entry Age	.095	.038	.085	.011	.271
Program Era	.017	.005	.025	.002	-1.600
Yrs of Participation	.047	.032	.120	.009	-2.218 ^a
Challenge	.165	.093	.248	.034	-.839

Table 38: (Cont.)

Path Variable	4-H Alumni		Other Participants		t Value
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error	
Community Events (cont.)					
Develop	.169	.087	.147	.032	.233
Attitude	-.214	.093	-.161	.037	-.528
Education	.286	.051	.287	.018	-.008
H.S. Grades	.143	.056	.052	.018	1.546
Agricultural Group					
Sex	-.226	.082	-.161	.024	-.757
Residence	-.156	.022	-.121	.007	-1.475
Region	.012	.036	-.011	.010	.623
Entry Age	.053	.022	.051	.005	.096
Program Era	.001	.002	-.003	.001	1.269
Yrs of Participation	.046	.018	.039	.004	.355
Challenge	.011	.054	.037	.016	-.458
Develop	-.012	.051	-.109	.015	1.824
Attitude	.038	.054	.051	.017	-.229
Education	.051	.029	.001	.008	1.621
H.S. Grades	.080	.032	.051	.008	.901
Political Group					
Sex	-.034	.086	-.160	.030	1.389
Residence	.005	.023	.067	.009	-2.507 ^a
Region	.016	.038	.023	.013	-.187
Entry Age	-.021	.023	-.000	.007	-.887
Program Era	.012	.003	.008	.001	1.100
Yrs of Participation	.001	.019	.037	.005	-1.836 ^b
Challenge	-.017	.056	.146	.020	-2.746 ^b
Develop	.194	.053	.178	.019	.288 ^c
Attitude	.005	.056	-.209	.022	3.566 ^c
Education	.061	.031	.100	.011	-1.199 ^b
H.S. Grades	.128	.034	.014	.011	3.255 ^b
Industrial Foundation					
Sex	-.332	.068	-.113	.022	-2.929 ^b
Residence	-.006	.018	-.007	.007	.060
Region	.085	.030	-.005	.009	2.842 ^c
Entry Age	-.025	.018	-.029	.005	.228
Program Era	.001	.002	.005	.001	-1.452
Yrs of Participation	-.042	.015	-.016	.004	-1.677
Challenge	.057	.045	.115	.015	-1.232
Develop	.126	.042	.052	.014	1.690
Attitude	.020	.044	-.006	.016	.558
Education	.063	.025	.013	.008	1.967 ^a
H.S. Grades	.007	.027	.007	.008	-.000

Table 38: (Cont.)

Path Variable	4-H Alumni		Other Participants		t Value
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error	
Church					
Sex	.152	.145	.361	.056	-1.347
Residence	.006	.039	-.062	.017	1.599
Region	-.364	.064	-.260	.024	-1.520
Entry Age	.089	.039	.085	.012	.107
Program Era	.029	.005	.035	.002	-1.077
Yrs of Participation	.184	.032	.130	.010	1.632
Challenge	.072	.095	.355	.037	-2.785 ^b
Develop	.138	.088	-.279	.036	4.367 ^c
Attitude	.026	.095	-.019	.040	.444
Education	.079	.052	.170	.020	-1.658
H.S. Grades	.230	.056	.187	.020	.725
Extension Service					
Sex	.354	.263	.120	.091	.844
Residence	-.426	.071	-.792	.028	4.808 ^c
Region	-.769	.116	-.538	.038	-1.882 ^b
Entry Age	.249	.070	.026	.020	3.047 ^b
Program Era	.068	.009	.049	.003	1.938
Yrs of Participation	.411	.058	.150	.016	4.325 ^c
Challenge	.332	.172	.342	.060	-.051
Develop	.272	.161	-.093	.058	2.137 ^a
Attitude	.936	.171	.289	.066	3.528 ^b
Education	.346	.094	.085	.032	2.634 ^a
H.S. Grades	-.178	.103	-.048	.032	-1.206

^a Significant difference between coefficients at $\alpha = .05$, $t \geq \pm 1.960$.

^b Significant difference between coefficients at $\alpha = .01$, $t \geq \pm 2.576$.

^c Significant difference between coefficients at $\alpha = .001$, $t \geq \pm 3.291$.

^d The t values were computed with the following formula:

$$t = \frac{b_{4H} - b_{other}}{\sqrt{(SE_{4H})^2 + (SE_{other})^2}}$$

where b = unstandardized regression coefficient

SE = standard error for that b

Educational Accomplishments. Several statistical differences existed in factors affecting educational accomplishments. For level of education, residence as a youth (urban) and sex of the respondent (male) had more impact for other participants than for 4-H alumni. Conversely, challenges had twice the effect on education for 4-H alumni than it did for other participants. Entry age had a reversed effect. In reference to variation in grades sex (female), challenges and attitudes had more impact on 4-H alumni while residence (urban) and personal development accounted for the variation among other participants.

Community Involvement. Comparisons between 4-H alumni and other participants are shown likewise in Table 38 for their community involvement and utilization of Extension programs and services. While significant differences were identified between 24 sets of corresponding unstandardized path coefficients, only half of these sets of variables had interpretative relevance, according to the magnitude their standardized coefficients. Also, it should be remembered that the extent of community involvement by all respondents was generally limited and confined to church related groups. Overall, no relevant, significance differences were observed between 4-H alumni and other participants regarding background and life skill influences on their participation in civic and agricultural groups.

Elsewhere, major differences were observed for other activities. A single variable accounted for group differences in participation in chamber of commerce, community events, and industrial foundations. While males (sex) were more likely than females in both groups to be participants in chamber of commerce (4-H: $-.346$ vs. Other: $-.182$) and industrial activities (4-H: $-.332$ vs. Other: $-.123$), the degree of their importance in determining involvement in these activities was greater for 4-H alumni than others. Meantime, difference in years of participation in their respective youth programs distinguished

4-H'ers from others in community events. Although not an important factor for 4-H'ers, the longer the participation by non4-H'ers in youth programs, the greater their involvement as adults in community events.

Next, differences in participation by 4-H'ers and other participants in political groups was attributed to variations in their high school grades and attitudes toward their program experiences. High school grades were more important to 4-H'ers (.128) than others (.014) and conversely attitudes were more important for other participants (-.209) than 4-H alumni (.005).

The largest number of significant differences between the two study groups were observed on church activities and involvement with Extension services and programs. Years of participation and satisfaction with challenges and personal development provided by their youth programs were contrasting factors. 4-H'ers highly involved in church tended to have participated longer (.184 vs. .130) and were more satisfied with their personal development than other participants (.138 vs. -.279) in past youth programs. Other participants were affected more than 4-H'ers by positive perceptions of program challenges (.355 vs. .072) and their dissatisfaction with the lack of program contributions to their personal development.

Finally, differences in utilization of Extension programs and services were attributed to groups' variations in place of residence, region, years of participation, and attitudes. Number of years of participation, southern/north central region of current residence, and positive attitudes toward youth organizations were important variables for distinguishing 4-H alumni from other participants. In contrast, rural residence of youth was more important for other participants in explaining their differences between 4-H alumni in using Extension programs and services.

To summarize, not many respondents joined community organizations as adults. However, among those who did, 4-H alumni were disproportionately over-represented when compared to past participants in other youth programs. Differences in their levels of community involvement were attributed to numerous factors, yet only half of these background and life-skill factors had any statistical and meaningful relevance and they often varied from one type of activity to another, demonstrating that adult participation was generally restricted or specialized. Nevertheless, one variable, years of participation, most frequently distinguished variation between groups' participation. This was evident especially for community events, church, and Extension-related activities, the latter two being most popular activities among all respondents. This variable is also notable because the average number of years of participation was two years less than that for participants in other youth programs. This difference notwithstanding, no other consistent patterns in adult participation in community were discerned that demonstrated any advantages of life skills acquired in 4-H versus other programs.

SUMMARY, CONCLUSIONS AND IMPLICATIONS

SUMMARY

The 4-H youth program is one of the oldest and largest nontraditional educational efforts in public education in the United States. For nearly 80 years, 4-H has existed, in part, to help young people become mature, competent adults.

What started as an informal youth education movement around the philosophy of "learn by doing" by educational leaders who used agricultural sciences as a mechanism to tie formal education to the rural experiences of students has grown in size, membership and complexity. The 4-H program is part of the Cooperative Extension Service of the United States Department of Agriculture (USDA). It is administered at the federal level by Extension Service, USDA and at the state level by the state 1862 and 1890 land grant universities. Both cooperate at the county level with local government officials to bring the 4-H program to youth 9 to 19 years of age.

The 4-H program also is one of more than 300 national youth associations that share a common mission--transferring parts of the nation's cultural heritage (beliefs, attitudes, skills, knowledge, value, etc.) to young Americans under adult guidance (Erickson, 1986). For 4-H, that heritage is transferred through a curriculum embodied in the practical application of land grant university research in agriculture, home economics, and related areas. Because of its close ties to the land grant university, the public image of 4-H remains one of helping farm youth develop farm skills (SEA-Extension, 1980).

Over the years, efforts to assess the effectiveness of the 4-H program have been rather limited. In fact, most efforts have focused on the program's ability to reach increasing numbers of participants, with few addressing the impact of 4-H on its participants. In today's environment of complex problems,

budget restraints, and expensive program alternatives, evidence is needed concerning "who has benefited, by how much, and what difference does it make that individuals participated in 4-H?"

In response to the need for evidence of 4-H impact on youth development, Extension Service, USDA funded a national study of a cross-section of adult members of society. The study was guided by an attempt to answer five questions. They were:

1. Do 4-H alumni differ on selected characteristics from those who did not participate in 4-H?
2. In what types of youth development activities did respondents most often participate?
3. Which youth organizational activities were most valuable in the development of life skills?
4. Are 4-H alumni more involved in community activities than those who did not participate in 4-H?
5. Does 4-H make a difference?

To answer these and other questions about a decentralized educational program that has been in operation since the turn of the century, this study utilized statistical controls of data collected from a national sample. The four administrative regions of the Cooperative Extension Service--South, North Central, Northeast, and West--were used to stratify the sample, thus providing not only nationally but also regionally representative data. Because the total number of respondents among the four regions and between each sex varied more than was expected, the data were weighted to adjust for these differences. The adjusted sample sizes for each sex within the former 4-H and non4-H samples were then reduced by systematically selecting every tenth case. By reducing the weighted sample size, computer analysis was more efficiently conducted. As a consequence of these weighting efforts, the findings of this study are based on a weighted sample size of 16,177.

To fully evaluate the effects of prior participation in 4-H and other youth organizations on adult experiences, respondents were sorted into three groups--former participants in 4-H (4-H alumni), participants in other youth organizations excluding 4-H (other participants), and nonparticipants. Analyses of the weighted data were conducted in several ways. Descriptive statistics (means and standard deviations) were calculated to identify general patterns among the data. Next, tests of significant differences were conducted using Chi-square, Student's t test and analysis of variance. Third, factor analysis was used to identify covarying patterns of responses of respondents for selected variables. Fourth, scales were constructed to summarize experiences of adult participation in various community organizations. The reliability of each scale was subsequently tested. Finally, correlation and path analyses were computed to test for associational and causal relationships among the components of a Youth Experiential Learning Model.

In interpreting the model one should be aware that causal modeling cannot prove causality. Rather, it is a technique for selecting those variables that are potential determinants of the effects and then attempts to isolate the separate contributions to the effects made by each causal variable.

The first path in the Youth Experiential Learning Model addressed factors believed to impact on the length of one's membership in a youth organization. Because 4-H has an image of helping youth develop farm skills, this study examined the effects of gender, place of residence as a youth, entry age and program era (time of participation) on years of participation. Region in which the individual respondent now lives also was included in the first path to control for possible geographical variations in response patterns and to detect 4-H administrative regional differences.

The second path identified the effects of background characteristics, entry age, program era, and length of organizational learning experiences on

the development of life skills. It was assumed that length of participation in a youth organization would have a positive impact on the development of life skills. For this study life skills were divided into two categories. Those skills related to problem solving, personal development, and attitudes toward activities and directions of the organization were analyzed in this second path. Those life skills related to competencies were addressed in the third path.

The third path focused on the impact of life skills on formal educational accomplishments. Educational accomplishments were separated from other life skills for two reasons. First, it was not possible to measure respondents' competency skills related to practical experiences. Therefore, formal educational accomplishments serve as a proxy for competencies. Second, community leaders often have more formal education than those who are not as active in the community. By separating educational accomplishments from other life skills, the intervening effects of life skills on leadership through educational accomplishments could be examined.

The final path to be examined addressed the impact of educational accomplishments and years since youth participation on community involvement. For this study community involvement was measured in two ways: participation in seven types of community activities/organizations and programs conducted by the Extension Service. Years since participation in youth organizations was included in the analysis to control for possible variations in age of respondents and, simultaneously, potential organizational changes in 4-H which may have occurred across different cohorts of membership.

A limited model of adult participation in community affairs also was constructed for nonparticipants in past youth programs. Adult involvement in community affairs and Extension activities was hypothesized to be affected by two groups of background characteristics--demographic and educational.

Results of the Research Model

The first question to be addressed concerned potential differences among the three study groups in terms of sex, race, age, residential characteristics, educational attainment, achievement characteristics, employment, income patterns, and size of family and children's participation in youth programs. Respondents in each study group had a wide variety of background characteristics. 4-H alumni and past participants of other youth programs were more alike than nonparticipants in terms of their race, years of age, level of educational attainment, high school achievement, employment status, total family income, and number of children participating currently in youth programs. Nonparticipants had slightly more minority representation, were older, and had lower levels of education attainment, employment status, and family income. Differences between 4-H alumni and other respondents were apparent with regard to where they resided most of their life and to their children's participation in youth programs. Alumni were reared primarily in rural areas and were more likely to have children in a 4-H program. Conversely, other respondents were reared primarily in urban areas and were more likely to have children in different youth programs. However, less than half of all respondents with children reported participation activity in youth programs for their children.

The second question concerns the type of youth programs respondents participated in as youth. Non4-H'ers primary reason for not joining 4-H was lack of availability of a 4-H program. Less than one-fourth said that 4-H did not meet their interests.

4-H alumni activities, organized clubs and competition were the most popular forms of participation in 4-H. 4-H alumni most valued the inputs and teachings of adult volunteer leaders, family members, and club meetings. Among those alumni who also participated in other organizations, a slight majority rated those experiences over 4-H in developing leadership skills and receiving

responsibilities. Conversely, a slight majority rated their 4-H experiences higher in gaining knowledge and skills and developing a feeling of self-worth.

The third question to be addressed concerned the value that both 4-H alumni and other participants placed on different types of youth organizational experiences. The most useful experiences for both 4-H alumni and other participants came from contact with other people in the organization. In addition, opportunities to develop skills and make a contribution to the organization were most highly rated by both groups. Although more recent 4-H alumni placed higher value on leadership opportunities than did those of earlier years, overall, 4-H alumni were less satisfied than other participants on opportunities for leadership. Finally, the largest contributions to personal development for both groups were learning to work with others and developing a sense of responsibility. Based on comparisons of ratings of experiences, 4-H alumni seemed more satisfied with their organizations' contributions to personal development than did participants of other organizations.

Results of a factor analysis of ratings of quality of experiences indicated that the more involved the individual in planning and decision-making, the more challenges and responsibilities the individual incurred. In addition, the strongest contribution to personal development was experiences contribution to self-esteem--self-confidence and responsibility. Finally, the benefits of knowledge and skills had a lasting impact on respondent attitudes toward the youth organizations to which they belonged.

The fourth question to be addressed related to adult community involvement. This study found that participation of respondents as adults in community events and in the programs and services of the Extension Service was limited. Large majorities of each group were not members of community organizations nor users of the examined Extension programs. When respondents were members of community organizations, they were often highly involved by regular

attendance and committee membership. Comparisons of 4-H alumni with non4-H respondents produced more often significant differences than not. These alumni tended to be more involved in community activities and 4-H leadership positions than other groups, particularly former nonparticipants of youth programs. Moreover, 4-H alumni and their families more often used the programs and services of the Extension Service.

The final question to be addressed focuses on the value of 4-H by examining the impact of participation in youth programs on the development of individuals' life skills and their subsequent involvement in community activities. A causal model depicting the sources of influence on community involvement was divided into four outcomes: effects on length of organizational membership, life skills, educational accomplishments and community involvement. Each effect was assumed to depend both on all previous outcomes in the model and on exogenous variables. Therefore, a regression model was formulated for each effect on each of the three groups in order to determine the impact of participation in organizations as a youth on involvement in the community as an adult. For nonparticipants, the model proposed two outcomes: effects on educational accomplishments and community involvement.

The variables selected to operationalize the model were first analyzed by calculating their product-moment correlations. The correlation matrix for each model revealed no extremely large correlation coefficients between independent variables hypothesized to impact on dependent variables. Findings of the path analysis are presented below.

- **Effects on Years of Participation**

The average age which respondents joined youth organizations was 10.6 for 4-H alumni and 9.5 for other participants. Further, 4-H alumni stayed for 4 years while other participants held membership for 6 years. It was found that those who stay in 4-H the longest were most likely to have

joined at an early age, resided in a rural area, lived in the south/north central states, and were male. For other participants, longer membership came from those who joined early, were females, resided in urban areas, and lived in the northeast/west regions of the county. The era of participation had negligible effects for both groups. Collectively, the variables in the models explained 15 percent of the variation in the length of time individuals were members of 4-H and 25 percent of the variation in length of membership in other youth organizations.

- **Effects on Life Skills**

The second step of the path model measured the impact of background characteristics and length of organizational experiences on the development of life skills. Of the factors impacting on life skills, the most dominant variable for both groups was years of participation, followed by entry age, and sex of the respondent. Generally, those who were participants for a longer period of time, joined at an early age, and were female were more satisfied with the challenges and responsibilities incurred, personal development attained, and directions taken by the organization in which they held membership. The era of participation had a positive effect 4-H alumni's attitudes about their experiences. Alumni who participated in the early years of the 4-H program seemed to be the most satisfied with their experiences.

- **Effects on Education**

The third step of the model measured the effects of background characteristics and life skills on educational achievements. For 4-H alumni, satisfaction with their program's challenges and responsibilities had the most significant, positive effect on achieved level of schooling and grades. Among other participants, respondents with urban backgrounds had

more educational achievement while those with less satisfaction from their participation in youth programs made better grades.

- **Effects on Adult Community and Extension Involvement**

While activity in adult community and Extension-related activities was generally low for all respondents, 4-H alumni were more active than both past participants in other programs and nonparticipants. Among 4-H'ers, the oldest and most educated respondents were the most active, especially in church and Extension contact. Adult activity of past participants in other programs was attributed to their years of participation, years since participation in youth programs (program era), and residence in the South and North Central regions of the U.S. Nonparticipants from these areas and with higher levels of education tended to be highly active in the community and more frequent users of Extension programs and services.

Conclusions and Implications

Overall, 4-H membership was rated by respondents as having a high, positive image when compared to other youth. Yet the 4-H program has three limiting factors affecting its growth. One is its difficulty acquiring new members since it was generally "perceived" as being unavailable in many areas. The second factor is its inability to retain membership in their late teens. Fifty-nine percent of the 4-H alumni reported dropping out of the program because it no longer met their interest. Third, opportunities for leadership may be too restricted. Of the 53 percent of the 4-H alumni who held membership in other youth organizations, a significant number felt that their experiences in other youth programs were more helpful in developing leadership skills and acceptance of responsibility. Nevertheless, much value was derived from participation in 4-H and other youth programs as well. Large percentages of respondents claimed that some of this value was attained from their contact with people; particularly valued were the contributions of adult volunteer

leaders, family members, club meetings and the competitions. Participants in all youth programs seemed to rate highly the opportunities they had to develop their skills, to make contributions to their programs and to develop communication and cooperation skills. All wanted more leadership opportunities.

Compared to others, 4-H alumni were more satisfied with the program's contribution to their personal development (e.g., development of self-worth, responsibility development, and goal setting). However, significant percentages of alumni also felt that their experiences in other youth programs were more helpful in developing leadership skills and receiving the most responsibilities; 53 percent had other program memberships.

Despite their positive experiences in youth programs, for most participants much of their experiences were not translated into corresponding levels of adult activity. Large majorities were not joiners, yet 4-H alumni were involved more often than others. Further, they were more likely to involve their children in 4-H and other youth programs, as well, and to be involved themselves as a 4-H leader.

Based on the implications as discussed, the following recommendations are provided:

1. Extension should publicize its 4-H programs so that nontraditional audiences can be better informed of opportunities from participation in 4-H.
2. Programs must be designed for older teens. Particular attention should be given to broadening opportunities for leadership.
3. Those individuals earning higher grades were less satisfied with youth organization contributions to their personal development. Efforts should be made to insure that youth activities and programs adequately challenge all youth.

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Appendix A: States Comprising 4-H Regions in National Alumni Study

<u>South</u>	<u>North Central</u>	<u>Northeast</u>	<u>West</u>
Alabama	Illinois	Connecticut	Arizona
Arkansas	Indiana	Delaware	California
Florida	Iowa	Maine	Colorado
Georgia	Kansas	Maryland	Idaho
Kentucky	Michigan	Massachusetts	Montana
Louisiana	Minnesota	New Hampshire	Nevada
Mississippi	Missouri	New Jersey	New Mexico
North Carolina	Nebraska	New York	Oregon
Oklahoma	North Dakota	Pennsylvania	Utah
South Carolina	Ohio	Rhode Island	Washington
Tennessee	South Dakota	Vermont	Wyoming
Texas	Wisconsin	West Virginia	
Virginia			

Appendix B: 4-H ALUMNI STUDY SURVEY QUESTIONS

ID Number _____
 4-H Region _____
 State _____

1. As a youth, did you participate in the 4-H youth program?

1. NO _____ GO TO QUESTION 3. PAGE 8.

2. YES _____

2. In regard to your experiences in 4-H.

A. How old were you when you first participated in 4-H? _____ YRS

B. How many years did you participate in 4-H? _____ YRS

C. Were you in: (Check all that apply).

- () 1. 4-H Club in School
- () 2. 4-H Community Club
- () 3. 4-H Project Club
- () 4. School Enrichment Program
- () 5. 4-H Camp
- () 6. Individual Study Using 4-H Project Manuals

D. Did you ever complete a 4-H project?

1. NO _____ GO TO QUESTION 2.F. PAGE 2.

2. YES _____

E. I am going to read several sources of information you may have used in your 4-H project work and ask you to rate each on a scale of one to five with one being of no help and five being very helpful.

HOW WOULD YOU RATE...	OF NO					VERY	DON'T
A 1,2,3,4, OR 5	HELP					HELPFUL	READ NA
1. Project Manuals	1	2	3	4	5	9	
2. Adult 4-H Leaders	1	2	3	4	5	9	
3. Teen or Junior Leaders	1	2	3	4	5	9	
4. Family Members	1	2	3	4	5	9	
5. County Extension Staff	1	2	3	4	5	9	
6. Books or Magazines	1	2	3	4	5	9	
7. 4-H Club Meetings	1	2	3	4	5	9	
8. Workshops, Clinics, or Tours	1	2	3	4	5	9	

QUESTION 2 (cont.)

F. While in 4-H...

	<u>NO</u>	<u>YES</u>	<u>DON'T READ NA</u>
1. Were you a club officer or a committee member?	1	2	9
2. Did you participate in:	1	2	9
A. Community Service Project(s)	1	2	9
B. Stock Show(s) and Fairs	1	2	9
C. Demonstration contests, fashion shows, judging contests or public speaking contests	1	2	9
D. Exchange program (County, Interstate, International)	1	2	9
E. National Trips (4-H Congress, 4-H Conference, etc.)	1	2	9

G. Now I would like for you to recall your experiences in 4-H, and rate them on a scale of 1 to 5 with one being of no use and five being extremely useful.

<u>HOW WOULD YOU RATE...</u> <u>A 1,2,3,4, OR 5</u>	<u>OF NO</u>					<u>DON'T READ NA</u>
	<u>USE</u>					<u>EXTREMELY USEFUL</u>
1. The project you worked on	1	2	3	4	5	9
2. The people you were with	1	2	3	4	5	9
3. The competition of the stock shows and fairs	1	2	3	4	5	9
4. Club meetings	1	2	3	4	5	9
5. Awards and prizes received	1	2	3	4	5	9
6. Exchange trips, the opportunity to travel	1	2	3	4	5	9

QUESTION 2 (cont.)

- H. I am going to ask some questions about the challenges and responsibilities of your 4-H club. As I read each, please tell me if you never, seldom, occasionally, often, or very often experienced it.

READ	OCCASION-					DON'T
	NEVER	SELDOM	ALLY	OFTEN	VERY OFTEN	READ NA
1. How often were you given challenging tasks	1	2	3	4	5	9
2. How often were you included in making important decisions	1	2	3	4	5	9
3. How often were you involved in planning club activities	1	2	3	4	5	9
4. How often did you have freedom to develop and use your own skills	1	2	3	4	5	9
5. How often did you feel you made a contribution	1	2	3	4	5	9
6. How often were you given an opportunity to lead others	1	2	3	4	5	9
7. How often did you receive encouragement and help from home	1	2	3	4	5	9

- I. There are a number of ways that the 4-H program could contribute to your personal development. As I read each one, tell me how you would rate it using a scale of 1 to 5 with one being no contribution and five being of great contribution.

HOW WOULD YOU RATE...A 1,2,3,4, or 5?

	GREAT					DON'T
	NONE				CONTRI- BUTION	READ NA
1. Developing personal pride in achievements and progress	1	2	3	4	5	9
2. Developing self confidence	1	2	3	4	5	9
3. Learning to work with others	1	2	3	4	5	9
4. Developing leadership skills	1	2	3	4	5	9

QUESTION 2 (cont.)

	NONE				GREAT CONTRI- BUTION	DON'T READ NA
5. Developing the ability to communicate effectively	1	2	3	4	5	9
6. Acquiring skills necessary for employment	1	2	3	4	5	9
7. Learning the importance of good nutrition	1	2	3	4	5	9
8. Learning to select and construct articles for clothing and/or home use	1	2	3	4	5	9
9. Gaining understanding of how factors of production, processing, marketing and distribution of agricultural products affect the well-being of our nation	1	2	3	4	5	9
10. Developing a sense of responsibility	1	2	3	4	5	9
11. Setting personal goals	1	2	3	4	5	9
12. Involvement in community activities	1	2	3	4	5	9

J. Again using a 1 to 5 scale, how much, if any, influence did your participation in 4-H have on

	NONE				VERY MUCH	DON'T READ NA
1. Continuing your education through high school	1	2	3	4	5	9
2. Continuing your education beyond high school	1	2	3	4	5	9
3. Your choice of job/career	1	2	3	4	5	9
4. Your choice of college to attend	1	2	3	4	5	9
5. Your preparation for assuming leadership responsibilities	1	2	3	4	5	9
6. Your parents' farming and/or home economic practices	1	2	3	4	5	9

QUESTION 2 (cont.)

K. Now we'd like to know your opinion of some aspects of the overall 4-H program. Please tell me if you agree or disagree with each of the following.

	DO YOU (READ)				
	Strongly Disagree	Slightly Disagree	DON'T (READ) Uncertain	Slightly Agree	Strongly Agree
1. The 4-H program placed too much emphasis on competition and wards.	1	2	3	4	5
2. 4-H had little to offer Jr. High and High School youth.	1	2	3	4	5
3. There was no need for a 4-H camping program.	1	2	3	4	5
4. 4-H kept young people busy and out of trouble more than most other youth programs.	1	2	3	4	5
5. Parents and leaders benefited in learning from 4-H projects.	1	2	3	4	5
6. 4-H opportunities beyond the club and county were a positive factor for participating in 4-H, such as activities, events awards, and trips.	1	2	3	4	5
7. The awards program in 4-H was a positive incentive that kept members in 4-H.	1	2	3	4	5
8. Knowledge and skills gained through 4-H have benefited members in their adult life.	1	2	3	4	5
9. Agriculture and home economics should continue to be the base of 4-H projects.	1	2	3	4	5

QUESTION 2 (cont.)

- L. Young people sometimes consider it more of an honor or prestige to belong to one organization than another. Thinking of all youth organizations in your community, in which of the following groups do you think the youth of your community would put 4-H?

- () 1. Bottom group
- () 2. Next to the bottom
- () 3. Middle
- () 4. Next to the top
- () 5. Top Group

- M. Did you decide to leave the 4-H program while you were still eligible to participate?

1. NO _____ GO TO QUESTION 2.N. PAGE 6.

2. YES _____

A. How old were you when you left the program _____ YRS

B. Were the following reasons important in your decision to drop out of 4-H?

	<u>NO</u>	<u>YES</u>
1. No longer eligible to participate	1	2
2. There was a lack of funds needed to finance my project	1	2
3. Did not meet my interests	1	2
4. 4-H was for younger kids	1	2
5. Did not learn any subject knowledge or beneficial skills	1	2
6. The 4-H program placed too much emphasis on competition	1	2

- N. Were you a member of another youth program besides 4-H?

1. NO _____ GO TO QUESTION 4. PAGE 12.

2. YES _____

QUESTION 2 (cont.)

- a. Which of the following youth programs were available to you in your community?

ORGANIZATION	WAS AVAILABLE			WERE YOU A MEMBER?	
	Not	Sure	No	Yes	→ No Yes
1. Scouts	9		1	2	1 2
2. Campfire	9		1	2	1 2
3. YMCA/YWCA	9		1	2	1 2
4. Religious Youth Group	9		1	2	1 2
5. FFA/FHA	9		1	2	1 2
6. Boy's/Girl's Clubs	9		1	2	1 2
7. OTHER: _____	9		1	2	1 2

- b. Now I would like for you to compare your 4-H experiences to that of other youth groups. For each experience I read, tell me who was most helpful: 4-H, other youth programs or were they about the same?

	OTHER YOUTH PROGRAMS	ABOUT THE SAME	4-H
1. Learned the most skills and subject knowledge.	1	2	3
2. Learned the most leadership skills.	1	2	3
3. Received the most responsibilities.	1	2	3
4. Learned self confidence worth.	1	2	3
5. Improved communications skills.	1	2	3
6. Developed cooperative skills and attitudes towards others.	1	2	3

NOW GO TO QUESTION 4. PAGE 12.

3. A. What were your reasons for not participating in 4-H?
DO NOT READ. CHECK ALL THAT APPLY

- () 1. 4-H was not available
() 2. Did not know about 4-H
() 3. Did not have the funds to participate
() 4. Did not meet my interests
() 5. 4-H was for younger youth
() 6. Did not know how to enroll
() 7. Friends did not participate
() 8. Too competitive
() 9. Not enough challenging opportunities
() 10. _____
() 11. _____

- B. As I read the following list of youth programs, please tell me, which programs were available to you.

READ ORGANIZATION	WAS AVAILABLE			WERE YOU A MEMBER?	
	Not	Sure	No	Yes	Yes
1. Scouts	9		1	2	1 2
2. Campfire	9		1	2	1 2
3. YMCA/YWCA	9		1	2	1 2
4. Religious Youth Group	9		1	2	1 2
5. FFA/FHA	9		1	2	1 2
6. Boy's/Girl's Clubs	9		1	2	1 2

IF RESPONDENT WAS NOT A MEMBER OF ANY YOUTH PROGRAM, GO TO QUESTION 4, PAGE 12.

- C. How old were you when you first participated in youth programs? ____ YRS
D. How many years did you participate in youth programs? ____ YRS

QUESTION 3 (cont.)

E. While you participated in youth programs...

WERE YOU A:	<u>NO</u>	<u>YES</u>
1. Club Officer or Committee Member	1	2

DID YOU PARTICIPATE IN:

2. Community Service Projects	1	2
3. Exchange programs (County, Interstate, International)	1	2
4. National Trips	1	2

F. Now I would like for you to recall your experiences in youth programs. As I read each, please rate it on a scale of 1 to 5 with one being of no use and five being extremely useful.

HOW WOULD YOU RATE...	OF NO USE					EXTREMELY USEFUL	DON'T READ NA
A 1,2,3,4, OR 5							
1. The projects you worked on	1	2	3	4	5	9	
2. The people you were with	1	2	3	4	5	9	
3. The activities you participated in	1	2	3	4	5	9	
4. Club meetings	1	2	3	4	5	9	
5. Awards and prizes received	1	2	3	4	5	9	
6. Opportunity to travel	1	2	3	4	5	9	

G. Now I am going to ask some questions about the challenges and responsibilities within the youth programs you were a member of. As I read each, please tell me if you never, seldom, occasionally, often or very often experienced it.

	<u>NEVER</u>	<u>SELDOM</u>	<u>OCCASION- ALLY</u>	<u>OFTEN</u>	<u>VERY OFTEN</u>	DON'T READ NA
1. How often were you given challenging tasks	1	2	3	4	5	9
2. How often were you included in making important decisions	1	2	3	4	5	9

QUESTION 3 (cont.)

	NEVER	SELDOM	OCCASION- ALLY	OFTEN	VERY OFTEN	DON'T READ NA
3. How often were you involved in planning club activities	1	2	3	4	5	9
4. How often did you have freedom to develop and use your own skills	1	2	3	4	5	9
5. How often did you feel you made a contribution	1	2	3	4	5	9
6. How often were you given an opportunity to lead others	1	2	3	4	5	9
7. How often did you receive encouragement and help from home	1	2	3	4	5	9

H. There are several ways that youth programs could contribute to your personal development.

I will read a list of ways and ask you to rate each on a scale of 1 to 5 with one being no contribution and five being of great contribution to your personal development.

HOW WOULD YOU RATE...						GREAT CONTRI- BUTION	DON'T READ NA
A 1,2,3,4, OR 5	NONE						
1. Developing personal pride in achievements and progress	1	2	3	4	5	9	
2. Developing self confidence	1	2	3	4	5	9	
3. Learning to work with others	1	2	3	4	5	9	
4. Developing leadership skills	1	2	3	4	5	9	
5. Developing the ability to communicate effectively	1	2	3	4	5	9	
6. Acquiring skills necessary for employment	1	2	3	4	5	9	
7. Learning the importance of good nutrition	1	2	3	4	5	9	

QUESTION 3 (cont.)

HOW WOULD YOU RATE...	GREAT					DON'T
A 1,2,3,4, OR 5	CONTRI- BUTION					READ NA
NONE						
8. Learning to select and construct articles for home use and/or clothing	1	2	3	4	5	9
9. Gaining understanding of how factors of production, processing, marketing and distribution of agricultural products affect the well-being of our nation	1	2	3	4	5	9
10. Developing a sense of responsibility	1	2	3	4	5	9
11. Setting personal goals	1	2	3	4	5	9
12. Involvement in community activities	1	2	3	4	5	9

- I. Again, using the same scale, how much, if any, influence did your participation in youth programs have on the following:

HOW WOULD YOU RATE...	VERY					DON'T
A 1,2,3,4, OR 5	MUCH					READ NA
NONE						
1. Continuing your education through high school	1	2	3	4	5	9
2. Continuing your education beyond high school	1	2	3	4	5	9
3. Your choice of job/career	1	2	3	4	5	9
4. Your choice of college to attend	1	2	3	4	5	9
5. Your preparation for assuming leadership responsibilities	1	2	3	4	5	9

QUESTION 3 (cont.)

J. Now we'd like to know your opinion on some characteristics of the youth programs you were a member of. Please indicate the extent to which you agree or disagree with each of the following:

	DO YOU DON'T (READ)				
	Strongly Disagree	Slightly Disagree	Uncertain	Slightly Agree	Strongly Agree
1. The youth programs you belonged to placed too much emphasis on competition and awards.	1	2	3	4	5
2. The youth programs you belonged to had little to offer Jr. High and High School youth.	1	2	3	4	5
3. The youth programs you belonged to kept young people busy and out of trouble more than most other youth programs.	1	2	3	4	5
4. In the youth programs you belonged to, parents and leaders benefited as much as members did in learning from youth program projects	1	2	3	4	5
5. Awards programs were a positive incentive that kept members in my youth program.	1	2	3	4	5
6. Knowledge and skills gained through youth programs have benefited members in their adult life.	1	2	3	4	5

4. Let's now turn to your participation in community events in the past two years.

ARE YOU A MEMBER OF...	MEMBER		DO YOU ATTEND AT LEAST 25% OF THE MEETINGS		ARE YOU AN OFFICER OR COMMITTEE MEMBER	
	No	Yes	No	Yes	No	Yes
A. Civic clubs, luncheon clubs	1	2	1	2	1	2

QUESTION 4 (cont.)

ARE YOU A MEMBER OF...	MEMBER		DO YOU → ATTEND AT LEAST 25% OF THE MEETINGS		ARE YOU AN OFFICER OR COMMITTEE MEMBER	
	No	Yes →	No	Yes	No	Yes
B. The Chamber of Commerce	1	2	1	2	1	2
C. A committee concerned with community affairs	1	2	1	2	1	2
D. An agricultural related group	1	2	1	2	1	2
E. A political organization	1	2	1	2	1	2
F. An industrial foundation	1	2	1	2	1	2
G. A Church group	1	2	1	2	1	2

5. Are you now or have you ever been a 4-H leader?

1. No

2. Yes...What type of leader were you? (CHECK ALL THAT APPLY)

- () a. organizational
- () b. project
- () c. activity
- () d. junior or teen
- () e. other

6. Now I'm going to ask you how often you and your family presently participate in programs or use the services of the County Extension office?

DO YOU

	NEVER	ONCE OR TWICE/YR	3-5 TIMES/YR	EVERY OTHER MONTH	AT LEAST ONCE A MONTH
A. Attend educational programs sponsored by the Extension Service	1	2	3	4	5
B. Consult Extension Agricultural agents for help with agri- cultural/gardening/ landscaping problems	1	2	3	4	5
C. Consult Extension Home Economist for help with consumer/ home related matters	1	2	3	4	5

QUESTION 6 (cont.)

	<u>NEVER</u>	<u>ONCE OR TWICE/YR</u>	<u>3-5 TIMES/YR</u>	<u>EVERY OTHER MONTH</u>	<u>AT LEAST ONCE A MONTH</u>
D. Listen to Extension Radio Programs	1	2	3	4	5
E. Read news articles written by Extension personnel	1	2	3	4	5
F. Receive Extension newsletters	1	2	3	4	5

BACKGROUND CHARACTERISTICS

7. In my final series of questions, I'm going to ask you several questions that will help us better understand people's views on youth development. All information is confidential and will not be identified with your name.

Which of the following best describes where you have lived most of your life?

- () 1. On a farm or ranch
- () 2. In the open country, but not on a farm or ranch
- () 3. In a village (under 2,500 people)
- () 4. In a town (2,500-10,000 people)
- () 5. In a city (10,000-50,000 people)
- () 6. In a metropolitan area (city over 50,000 plus nearby suburbs)

8. What was the highest grade in school that you completed?

- () 1. Grammar school or less
- () 2. Some high school
- () 3. High school graduate
- () 4. Military/Vocational training
- () 5. Some college
- () 6. College graduate
- () 7. Professional/graduate degree

9. Overall, how would you describe your high school academic achievement?

- () 1. MOSTLY D's
- () 2. MIX OF C's and D's
- () 3. MOSTLY C's
- () 4. MIX OF C's and B's
- () 5. MOSTLY B's
- () 6. MIX OF B's and A's
- () 7. MOSTLY A's
- () 8. ALL A's (OR EQUIVALENT)

10. What is your employment status?

WOULD YOU SAY THAT YOU:

- ☐ 1. Are self-employed
- ☐ 2. Work full-time for someone
- ☐ 3. Work part-time only

- ☐ 4. Are temporarily unemployed
- ☐ 5. Are retired and not employed
- ☐ 6. Are disabled and not employed
- ☐ 7. Are a student and not employed
- ☐ 8. Are a full-time homemaker

GO TO QUESTION 12.

11. Do you work in an agriculturally related job?

1. NO _____

2. YES _____

12. Counting yourself, how many people currently reside in your household? _____

A. How many children do you have? _____ → _____

IF ANSWER IS 0 THEN GO TO QUESTION 13

B. How many children do you have at least 9 yrs of age or older? _____

IF ANSWER IS 0 THEN GO TO QUESTION 12 D.

C. How many of them are currently in or have participated in the 4-H youth program? _____

D. How many of them are currently a member of other youth programs? _____

13. In 1984, in which category was your total family income before taxes?

(INTERVIEWER; READ AND CHECK RESPONSE)

WAS IT:

- ☐ 1. Under \$5,000
- ☐ 2. \$5,000 to 10,000
- ☐ 3. \$10,000 to 15,000
- ☐ 4. \$15,000 to 20,000
- ☐ 5. \$20,000 to 25,000
- ☐ 6. \$25,000 to 30,000
- ☐ 7. \$30,000 to 35,000
- ☐ 8. \$35,000 to 40,000
- ☐ 9. \$40,000 to 50,000
- ☐ 10. \$50,000 or more
- ☐ 99. Don't know

14. What is your race/ethnic background?

ARE YOU:

- ☐ 1. Black
- ☐ 2. White
- ☐ 3. Hispanic
- ☐ 4. Asian
- ☐ 5. American Indian
- ☐ 6. Other (Write in) _____

15. Are you male or female? (DO NOT ASK IF YOU CAN DETERMINE BY VOICE OF RESPONDENT.)

- ☐ 1. Male
- ☐ 2. Female

16. What is your present age? _____ years

THIS CONCLUDES OUR INTERVIEW. I APPRECIATE THE TIME YOU HAVE TAKEN TO ANSWER OUR QUESTIONS

INTERVIEW COMPLETED ON TELEPHONE CONTACT:

- 1.
- 2.
- 3.

Appendix C: Population Estimates for 4-H and Non4-H Groups by Region and Sex.

Population Estimates (000's)	Northeast	South	North Central	West
Total 1980 Population ^a	55896	67973	58867	41806
Estimated 1984 Population ^b	57001	73912	59537	45634
Total 1985 4-H Membership				
Males	483	774	563	185
Females	556	819	651	235
<u>1980 Sex-Age Population (%)</u>				
Males, 9-18 years	8.7	8.8	9.1	8.6
Females, 9-18 years	8.2	8.4	8.3	8.2
Males, 19+ years	33.3	32.9	32.9	34.2
Female, 19+ years	38.1	36.4	34.6	36.0
<u>1984 Sex-Age Population Estimates (000's)</u>				
Males, 9-18 years	4938	6529	5393	3905
Females, 9-18 years	4674	6250	4958	3729
Males, 19+ years	18959	24296	19613	15594
Females, 19+ years	21726	26894	20616	16417
Male Ratio	3.839	3.721	3.636	3.993
Female Ratio	4.649	4.303	4.158	4.403
<u>Estimated Number of 4-H Alumni (000's)</u>				
Males	1854	2769	2045	740
Females	2584	3523	2706	1146

^aSource: U.S. Bureau of the Census, 1980.

^bSource: Sales and Marketing Management, 1985.

Appendix D: Chi Square Values for Ratings of Value of Experiences in Youth Organizations.

Type of Experience	Chi Value	Probability
Participation (Figure 7)		
Officer/Committee member	0.1	.744
Community service project	5.1	.024
Exchange programs	6.0	.014
National trips	13.6	.000
Contributions of Youth Organizations (Figure 11)		
Knowledge	17.2	.000
Leadership	11.5	.005
Responsibility	17.8	.000
Self-worth	3.9	.050
Communication	0.6	.400
Cooperation	0.0	--

Appendix E: Tests of Significance between Mean Scores for 4-H Alumni and Other Participants.

Variable	4-H Alumni		Other Participants		t value
	Mean Score	Standard Error	Mean Score	Standard Error	
Usefulness of Experiences (Figure 13)					
Projects	4.09	.024	3.78	.010	12.10 ^a
People	4.36	.019	4.23	.008	6.32 ^a
Competition/Activities	4.14	.027	3.96	.009	6.23 ^a
Club meetings	3.81	.024	3.40	.011	15.11 ^a
Awards/Prizes	3.79	.029	3.34	.014	14.01 ^a
Exchange trips	2.89	.049	2.41	.015	9.24 ^a
Opportunities for Challenges & Responsibilities (Figure 14)					
Challengings tasks	3.26	.028	3.19	.011	2.45 ^a
Making decisions	3.16	.029	2.92	.012	7.59 ^a
Planning activities	3.23	.030	3.25	.012	-.72
Freedom to develop skills	3.79	.026	3.58	.010	7.49 ^a
Making a contribution	3.54	.028	3.19	.011	-.46
Leadership opportunities	3.05	.031	3.16	.012	-3.46 ^a
Influence on Education & Career (Figure 15)					
High school education	2.99	.036	2.90	.015	2.22 ^a
College education	2.50	.035	2.45	.015	1.21
Job/Career	2.36	.035	2.37	.015	-.32
Choice of college	1.88	.033	1.86	.013	.52
Preparing for leadership	3.26	.032	3.12	.013	4.00 ^a

^a Significant difference in mean ratings at $\alpha = .05$.

Appendix F: Tests of Significance of Selected Development Experiences of 4-H Alumni and Other Participants by Program Era.

Development Experience	Program Era					
	1975-1985		1974-1966		1965 or less	
4-H Alumni	Mean	S.D.	Mean	S.D.	Mean	S.D.
Developing Personal Pride	4.4	.81	4.2	.87	4.3	.89
Developing Leadership Skills*	4.0	1.03	3.7	1.00	3.9	1.06
Too Much Emphasis on Competition	1.5	1.33	1.6	1.22	1.5	1.39
Little To Offer Older Youth*	1.3	1.47	1.1	1.20	0.9	1.24
Parents and Leaders Benefited	4.2	.83	4.4	.82	4.4	.83
Usefulness of Projects	4.1	.87	4.1	.86	4.1	.98
Usefulness of Club Meetings*	3.7	1.03	3.8	.89	3.8	.99
Given Challenging Tasks*	3.4	1.04	3.4	1.07	3.2	1.15
Making Important Decisions*	3.3	1.13	3.1	1.32	3.2	1.14
Freedom to Develop and Use Skills	3.8	1.00	3.8	1.03	3.8	1.07
Opportunity To Lead Others*	3.4	1.26	3.0	1.24	3.0	1.28
Other Participants						
Developing Personal Pride	4.1	1.02	3.9	.90	3.9	1.04
Developing Self-Confidence	4.1	.88	3.9	.94	4.0	1.04
Developing Leadership Skills	3.7	1.06	3.6	1.13	3.6	1.21
Too Much Emphasis on Competition*	1.9	1.46	1.6	1.36	1.5	1.42
Little To Offer Older Youth*	1.3	1.25	1.5	1.51	1.7	1.48
Parents and Leaders Benefited*	3.9	1.14	3.5	1.28	3.7	1.23
Usefulness of Projects*	4.0	.87	3.7	1.05	3.8	1.02
Usefulness of Club Meetings	3.3	1.10	3.3	1.01	3.5	1.11
Given Challenging Tasks	3.1	1.17	3.3	1.04	3.2	1.15
Making Important Decisions*	3.1	1.14	2.9	1.16	2.9	1.25
Freedom to Develop and Use Skills*	3.8	1.00	3.6	.98	3.5	1.16
Opportunity To Lead Others	3.2	1.20	3.2	1.06	3.1	1.21

* Significant difference between program eras as determined by Tukey's w-procedure, $\alpha = .05$.

Appendix G: Chi Square Values for Variables of Participation in Community Activities.

Activity and Participation Behavior	Member		Attendance		Officer	
	Chi Value	Probability	Chi Value	Probability	Chi Value	Probability
Civic Clubs	299.7	.0001	311.4	.0001	267.2	.0001
Chamber of Commerce	45.5	.0001	21.8	.0001	7.2	.0270
Community Events	170.6	.0001	198.1	.0001	156.5	.0001
Agricultural Group	126.2	.0001	126.8	.0001	91.0	.0001
Political Group	304.4	.0001	226.1	.0001	36.9	.0001
Industrial Group	50.4	.0001	30.5	.0001	36.9	.0001
Church	380.3	.0001	413.0	.0001	150.8	.0001